

**DRAFT**  
**Land Use Assumptions,  
Infrastructure Improvements Plan,  
and Development Fee Report**

**Prepared for:  
Town of Fountain Hills, Arizona**

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## **EXECUTIVE SUMMARY**

The Town of Fountain Hills hired TischlerBise to document land use assumptions, prepare an Infrastructure Improvements Plan (hereinafter referred to as the “IIP”), and update development fees pursuant to Arizona Revised Statutes (“ARS”) § 9-463.05 (hereinafter referred to as the “Enabling Legislation”). Municipalities in Arizona may assess development fees to offset infrastructure costs to a municipality for necessary public services. The development fees must be based on an Infrastructure Improvements Plan and Land Use Assumptions. The IIPs for each type of infrastructure are located in each infrastructure type’s corresponding section, and the Land Use Assumptions can be found in Appendix A. The proposed development fees are displayed in the Development Fee Report chapter.

Development fees are one-time payments used to construct system improvements needed to accommodate new development. The fee represents future development’s proportionate share of infrastructure costs. Development fees may be used for infrastructure improvements or debt service for growth related infrastructure. In contrast to general taxes, development fees may not be used for operations, maintenance, replacement, or correcting existing deficiencies.

This update of the Town’s Infrastructure Improvements Plan and associated update to its development fees includes the following necessary public services:

- Parks and Recreation Facilities
- Fire Facilities
- Street Facilities

This plan also includes all necessary elements required to be in full compliance with Arizona Revised Statutes (“ARS”) § 9-463.05 (SB 1525). It should be noted that this Infrastructure Improvements Plan and Development Fee study does not include storm water, drainage or flood control facilities.

### **ARIZONA DEVELOPMENT FEE ENABLING LEGISLATION**

The Enabling Legislation governs how development fees are calculated for municipalities in Arizona.

#### **Necessary Public Services**

Under the requirements of the Enabling Legislation, development fees may only be used for construction, acquisition or expansion of public facilities that are necessary public services. “Necessary public service” means any of the following categories of facilities that have a life expectancy of three or more years and that are owned and operated on behalf of the municipality: water, wastewater, storm water, drainage, flood control, library, streets, fire and police, and neighborhood parks and recreation. Additionally, a necessary public service includes any facility, not included in the aforementioned categories (e.g., general government facilities), that was financed before June 1, 2011 and that meets the following requirements:

1. Development fees were pledged to repay debt service obligations related to the construction of the facility.
2. After August 1, 2014, any development fees collected are used solely for the payment of principal and interest on the portion of the bonds, notes, or other debt service obligations issued before June 1, 2011 to finance construction of the facility.

## **Infrastructure Improvements Plan**

Development fees must be calculated pursuant to an IIP. For each necessary public service that is the subject of a development fee, by law, the IIP shall include the following seven elements:

- A description of the existing necessary public services in the service area and the costs to update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.
- An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.
- A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved Land Use Assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.
- A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.
- The total number of projected service units necessitated by and attributable to new development in the service area based on the approved Land Use Assumptions and calculated pursuant to generally accepted engineering and planning criteria.
- The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed 10 years.
- A forecast of revenues generated by new service units other than development fees, which shall include estimated state-shared revenue, highway users revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved Land Use Assumptions and a plan to include these contributions in determining the extent of the burden imposed by the development.

## **Qualified Professionals**

The IIP must be developed by qualified professionals using generally accepted engineering and planning practices. A qualified professional is defined as “a professional engineer, surveyor, financial analyst or planner providing services within the scope of the person’s license, education, or experience.” TischlerBise is a fiscal, economic, and planning consulting firm specializing in the cost of growth services and is licensed to do business in Arizona. Our services include development fees, fiscal impact analysis, infrastructure financing analyses, user fee/cost of service studies, capital improvement plans, and fiscal software. TischlerBise has prepared over 900 development fee studies over the past 40 years for local governments across the United States.

## **Conceptual Development Fee Calculation**

In contrast to project-level improvements, development fees fund growth-related infrastructure that will benefit multiple development projects, or the entire service area (usually referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of service units for each unit of development. For example, an appropriate indicator of the demand for parks is population growth and the increase in population can be estimated from the average number of persons per housing unit. The second step in the development fee formula is to determine infrastructure improvement units per service unit, typically called Level of Service standards, sometimes referred to as LOS. In keeping with the park example, a common LOS standard is improved park acres per thousand people. The third step in the development fee formula is the cost of various infrastructure units. To complete the park example, this part of the formula would establish a cost per acre for land acquisition and/ or park improvements.

## **Evaluation of Credits/Offsets**

Regardless of the methodology, a consideration of credits/offsets is integral to the development of a legally defensible development fee. There are two types of credits/offsets that should be addressed in development fee studies and ordinances. The first is a revenue credit/offset due to possible double payment situations, which could occur when other revenues may contribute to the capital costs of infrastructure covered by the development fee. This type of credit/offset is integrated into the fee calculation, thus reducing the fee amount. The second is a site-specific credit or developer reimbursement for dedication of land or construction of system improvements. This type of credit is addressed in the administration and implementation of the development fee program. For ease of administration, TischlerBise normally recommends developer reimbursements for system improvements.

## DEVELOPMENT FEE REPORT

### METHODOLOGY

Development fees for the necessary public services made necessary by new development must be based on the same level of service provided to existing development in the service area. There are three basic methodologies used to calculate development fees. They examine the past, present, and future status of infrastructure. The objective of evaluating these different methodologies is to determine the best measure of the demand created by new development for additional infrastructure capacity. Each method has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components. Additionally, development fees for public services can also include the cost of professional services for preparing IIP's and the related Development Fee report.

Reduced to its simplest terms, the process of calculating development fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of development fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss basic methods for calculating development fees and how those methods can be applied.

- **Cost Recovery** (past improvements) - The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.
- **Incremental Expansion** (concurrent improvements) - The incremental expansion method documents current level of service standards for each type of public facility, using both quantitative and qualitative measures. This approach assumes there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments to keep pace with development.
- **Plan-Based** (future improvements) - The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two basic options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).



A summary is provided in Figure 1 showing the methodology for each necessary public service, as well as the service area and cost allocation method used to develop the IIP and calculate the development fees. Due to the present uncertainty of development intensity, timeliness, and conveyance of State Land property in the Fountain Hills service area, it is recommended that growth-related transportation impacts be addressed through both plan-based and incremental expansion methodologies.

**Figure 1: Recommended Calculation Methodologies**

Necessary Public Service	Service Area	Incremental Expansion	Plan-Based	Cost Recovery	Cost Allocation
Parks and Recreation	Townwide	Developed Park Land, Park Amenities	Development Fee Report	N/A	Population, Jobs
Fire	Townwide	Fire Apparatus, Fire Equipment	Development Fee Report	N/A	Population, Jobs
Street	Townwide	Improved Intersections	Arterial Improvements, Development Fee Report	N/A	VMT

### Rounding

A note on rounding: Calculations throughout this report are based on an analysis conducted using Excel software. Most results are discussed in the report using two, three, and four-digit places, which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

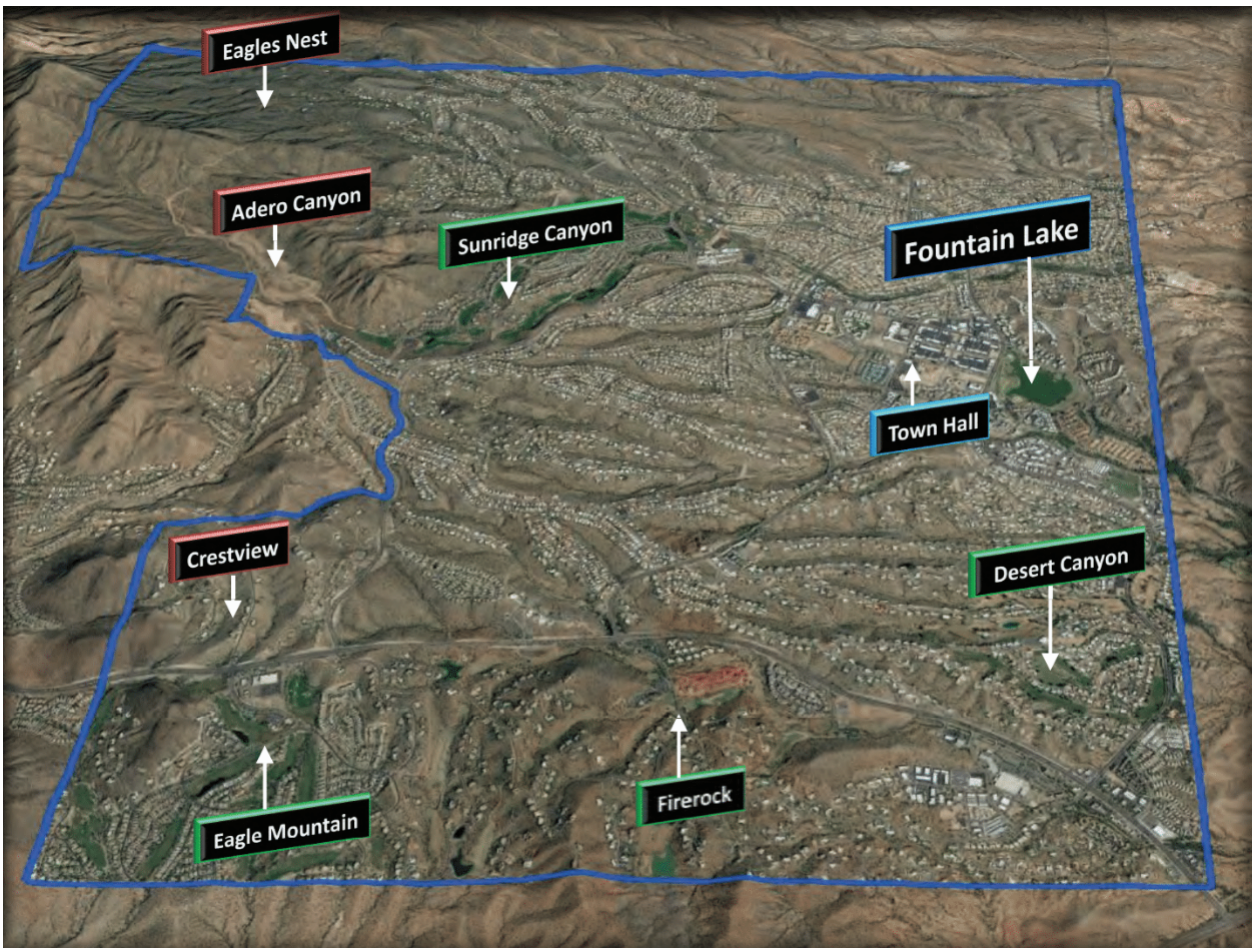
## SERVICE AREAS

ARS 9-463.05 defines “service area” as follows:

*Any specified area within the boundaries of a municipality in which development will be served by necessary public services or facility expansions and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan.*

The Town’s previous Land Use Assumptions, Infrastructure Improvement Plan, and Development Fee Report recommended one service area, shown below in Figure 2.

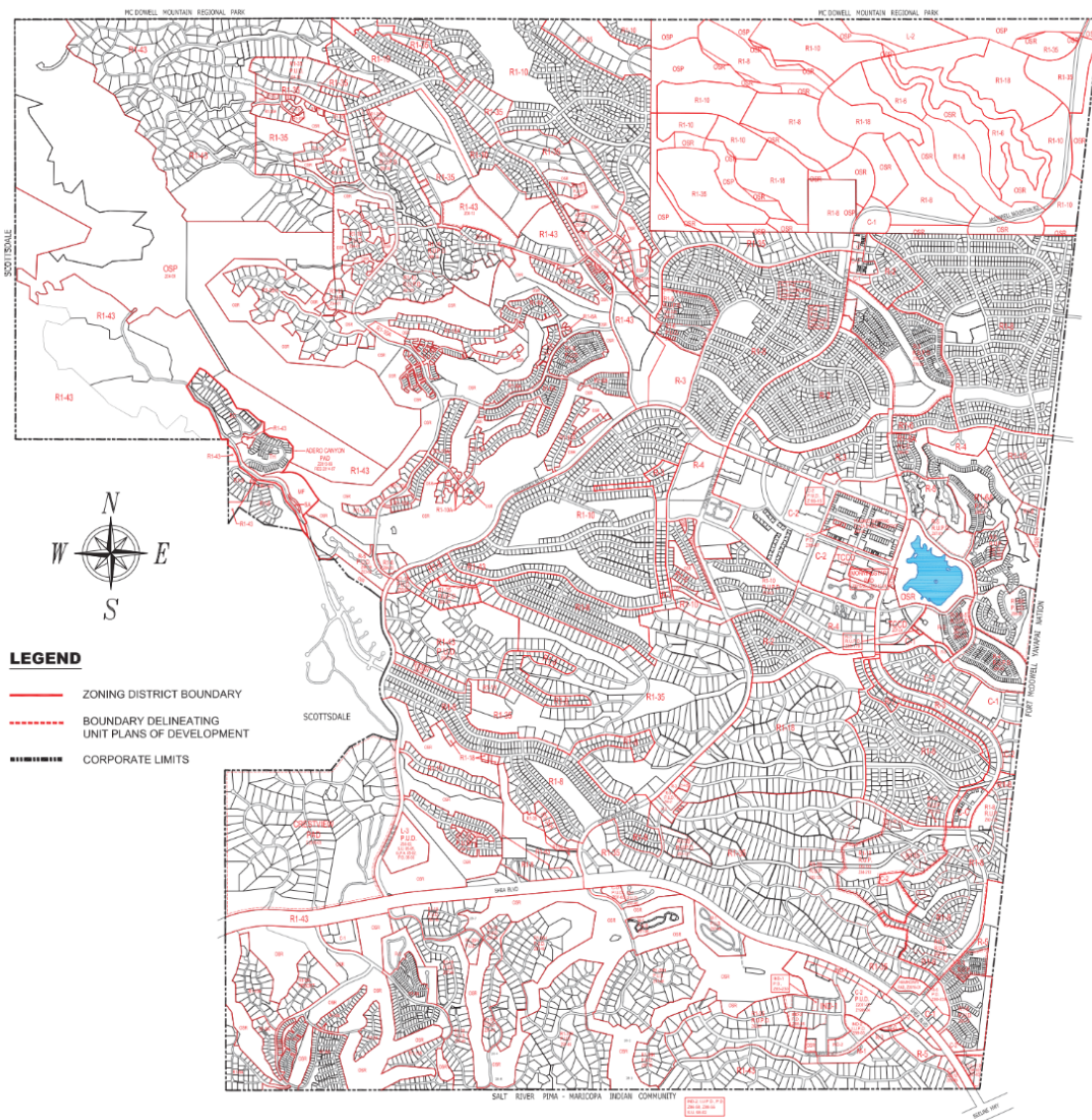
**Figure 2: Current Development Fee Service Area**





Much of the land in Fountain Hills has been developed with approximately 24 percent, or 2,400, of the 9,780 developable acres remaining until the community reaches “build out,” a state of maximum development under the adopted plan. As development of the remaining available land proceeds, it is important to identify any additional demands, and associated costs, for services that will be utilized by future development including the provision of adequate park and recreational space, transportation networks, fire apparatus and equipment. All of the elements incorporated into the study are intended to serve the entire Town with a standard level of service as opposed to bounded districts or subareas. As an example, referring to Figure 3, a new residential development in Section 2 is still likely to utilize regional recreational amenities and transportation infrastructure located throughout Town. Furthermore, fire demands change over time based on migration patterns of people and are not necessarily restricted to specific geographic sub-zones. As such, TischlerBise recommends a townwide service area for all fees.

**Figure 3: Proposed Development Fee Service Area**



## CURRENT DEVELOPMENT FEES

Fountain Hills' current development fees are shown below in Figures 4 and 5. Demand for services (parks and recreation, fire, and streets) is driven by the intensity of the use on those particular services; therefore, fees are assessed based on development type – residential or nonresidential. Current fees are shown in Figure 4 for residential development and in Figure 5 for nonresidential development. It is worth noting there are currently no fees for street improvements.

**Figure 4: Current Residential Development Fees**

Residential Development	Development Fees per Unit			
Development Type	Fire	Parks and Recreation	Street	Total
Single Family	\$300	\$1,301	\$0	\$1,601
Multi-Family	\$300	\$1,301	\$0	\$1,601

**Figure 5: Current Nonresidential Development Fees**

Nonresidential Development	Development Fees per Square Foot			
Development Type	Fire	Parks and Recreation	Street	Total
Industrial	\$0.24	\$0.00	\$0.00	\$0.24
Commercial	\$0.24	\$0.00	\$0.00	\$0.24
Institutional	\$0.24	\$0.00	\$0.00	\$0.24
Office	\$0.24	\$0.00	\$0.00	\$0.24

## PROPOSED DEVELOPMENT FEES

The proposed fees are based on a policy-level concept that development fees should fund 100 percent of growth-related infrastructure, therefore the fees shown below represent the maximum allowable fees. Fountain Hills may adopt fees that are less than the amounts shown; however, a reduction in development fee revenue will necessitate an increase in other revenues, a decrease in planned capital improvements, and/or a decrease in Fountain Hills' level-of-service standards. All costs in the Development Fee Report are in current dollars with no assumed inflation rate over time. If cost estimates change significantly over time, development fees should be recalibrated.

Proposed development fees are shown below in Figures 6 and 7. Development fees for residential development are assessed per dwelling unit, based on the type of unit. Nonresidential development fees are assessed per square foot of floor area.

**Figure 6: Proposed Residential Development Fees**

Residential Development	Development Fees per Unit			
Development Type	Fire	Parks and Recreation	Street	Total
Single Family	\$122	\$1,916	\$1,935	\$3,974
Multi-Family	\$94	\$1,479	\$964	\$2,537

**Figure 7: Proposed Nonresidential Development Fees**

Nonresidential Development	Development Fees per Square Foot			
Development Type	Fire	Parks and Recreation	Street	Total
Industrial	\$0.10	\$0.56	\$0.63	\$1.29
Commercial	\$0.14	\$0.81	\$2.86	\$3.82
Institutional	\$0.06	\$0.32	\$2.48	\$2.86
Office	\$0.18	\$1.03	\$1.24	\$2.45

## DIFFERENCE BETWEEN PROPOSED AND CURRENT DEVELOPMENT FEES

The differences between the proposed and current development fees are displayed below in Figure 8 for residential development and Figure 9 for nonresidential development.

**Figure 8: Difference Between Proposed and Current Residential Development Fees**

Residential Development	Development Fees per Unit			
Development Type	Fire	Parks and Recreation	Street	Fee Change
Single Family	(\$178)	\$615	\$1,935	\$2,373
Multi-Family	(\$206)	\$178	\$964	\$936

**Figure 9: Difference Between Proposed and Current Nonresidential Development Fees**

Nonresidential Development	Development Fees per Square Foot			
Development Type	Fire	Parks and Recreation	Street	Fee Change
Industrial	(\$0.14)	\$0.56	\$0.63	\$1.05
Commercial	(\$0.10)	\$0.81	\$2.86	\$3.58
Institutional	(\$0.19)	\$0.32	\$2.48	\$2.62
Office	(\$0.06)	\$1.03	\$1.24	\$2.21

## **PARKS AND RECREATION FACILITIES INFRASTRUCTURE IMPROVEMENTS PLAN**

ARS § 9-463.05 (T)(7)(g) defines the facilities and assets that can be included in the Parks and Recreational Facilities IIP:

*“Neighborhood parks and recreational facilities on real property up to thirty acres in area, or parks and recreational facilities larger than thirty acres if the facilities provide a direct benefit to the development. Park and recreational facilities do not include vehicles, equipment or that portion of any facility that is used for amusement parks, aquariums, aquatic centers, auditoriums, arenas, arts and cultural facilities, bandstand and orchestra facilities, bathhouses, boathouses, clubhouses, community centers greater than three thousand square feet in floor area, environmental education centers, equestrian facilities, golf course facilities, greenhouses, lakes, museums, theme parks, water reclamation or riparian areas, wetlands, zoo facilities or similar recreational facilities, but may include swimming pools.”*

The Parks and Recreation Facilities IIP includes components for developed park land, park amenities, and the cost of professional services for preparing the Parks and Recreation Facilities IIP and related Development Fee Report. An incremental expansion methodology is used for developed park land, and park amenities. A plan-based methodology is used for the Development Fee Report.

### **Service Area**

The Town of Fountain Hills plans to provide a uniform level of service and equal access to parks and recreational facilities within the Town limits. The parks and recreation programs are structured and provided to make full use of Fountain Hills’ total inventory of facilities. Therefore, the Parks and Recreation Facilities IIP uses a townwide service area.

## Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. TischlerBise recommends peak daytime population as a reasonable indicator of the potential demand for Parks and Recreational Facilities from residential and nonresidential development. According to the U.S. Census Bureau web application OnTheMap, there were 2,929 inflow commuters in 2015, which is the number of persons who work in Fountain Hills but live outside the Town. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states. OnTheMap data is used, as shown in Figure PK1, to derive functional population shares for Fountain Hills. The estimated peak population in 2015, which includes seasonal residents, was 28,282 persons. The study uses 2015 data because this the most recent year available for inflow/outflow data.

As shown in Figure PK1, the proportionate share is based on cumulative impact days per year with residents potentially impacting parks and recreational facilities 365 days per year. Inflow commuters potentially impact park and recreational facilities 250 days per year, assuming 5 workdays per week multiplied by 50 weeks per year. For parks and recreational facilities, residential development generates 93 percent of demand and nonresidential development generates the remaining seven percent of demand.

**Figure PK1: Daytime Population in 2015**

Fountain Hills Residents	Inflow Commuters	Cumulative Impact Days per Year			Cost Allocation for Parks	
		Residential <sup>1</sup>	Nonresidential <sup>2</sup>	Total	Residential	Nonresidential
28,282	2,929	10,322,928	732,250	11,055,178	93%	7%

1. Days per Year = 365

365

2. Days per Year = 250 (5 Days per Week x 50 Weeks per Year)

250

Source: Maricopa Association of Governments 2015 Population Estimate; TischlerBise Peak Population Analysis; U.S. Census Bureau, OnTheMap 6.1.1 Application, 2015.



## **RATIO OF SERVICE UNITS TO DEVELOPMENT UNITS**

ARS § 9-463.05(E)(4) requires:

*“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”*

Figure PK2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the persons per household for single-family (or single unit) and multi-family units. For nonresidential development, the table displays the number of employees per thousand square feet of floor area for four different types of nonresidential development.

**Figure PK2: Parks and Recreational Facilities Ratio of Service Unit to Development Unit**

Residential Development	
Development Type	Persons per Household <sup>1</sup>
Single Family	2.15
Multi-Family	1.66

Nonresidential Development	
Development Type	Jobs per 1,000 Sq. Ft <sup>1</sup>
Industrial	1.63
Commercial	2.34
Institutional	0.93
Office	2.97

1. See Land Use Assumptions

## **ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES**

ARS § 9-463.05(E)(1) requires:

*“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

ARS § 9-463.05(E)(2) requires:

*“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

## Developed Park Land – Incremental Expansion

The summary of developed neighborhood and community park land in Fountain Hills is displayed in Figure PK3. Town-owned golf courses, regional parks, retention ponds, and conservation parks were excluded from the inventory. Fountain Hills has a total of 127 acres of developed park land.

The level of service for residential development is 0.00410 acres per resident, which is calculated by multiplying the total number of acres (127) by the residential proportionate share (93 percent) and dividing this total by the 2018 peak population (28,840). The nonresidential level of service is 0.00161 acres per job, which is found by multiplying the total number of acres (127) by the nonresidential proportionate share (7 percent) and dividing this total by the number of jobs in 2018 (5,521). The analysis uses a developed cost of \$40,000 per acre – this includes infrastructure costs and excludes land acquisition costs. Multiplying the average cost per developed acre of park land (\$40,000) by the residential and nonresidential levels of service results in a cost of \$163.81 per person and \$64.41 per job. Note that while the LOS standards shown are rounded to the fifth decimal place, the analysis does not round these figures.

**Figure PK3: Developed Park Land Level-of-Service Standards**

Description	Developed Acres
Desert Vista Park	12.0
Fountain Park	65.0
Four Peaks Park	14.0
Golden Eagle Park	25.0
Avenue Plaza	3.0
Botanical Garden Preserve	8.0
<b>Total</b>	<b>127.0</b>

Cost Allocation Factors	
Developed Cost per Acre <sup>1</sup>	\$40,000

Level-of-Service Standards	
Existing Developed Acres	127.0
<b>Residential</b>	
Residential Share	93%
2018 Peak Population	28,840
Developed Acres per Person	0.00410
<b>Cost per Person</b>	<b>\$163.81</b>
<b>Nonresidential</b>	
Nonresidential Share	7%
2018 Jobs	5,521
Developed Acres per Job	0.00161
<b>Cost per Job</b>	<b>\$64.41</b>

1. Includes infrastructure costs but excludes acquisition costs.

## Park Amenities – Incremental Expansion

Fountain Hills’ park amenities inventory is displayed in Figure PK4. Fountain Hills parks have 70 amenities, which have a total replacement cost of about \$22.1 million. Dividing the total replacement cost by the total number of amenities yields an average cost per amenity of \$315,757 as shown in Figure PK4.

**Figure PK4: Park Amenities Inventory**

Description	Units	Unit Cost	Replacement Cost
GE-Softball Fields	3	\$725,000	\$2,175,000
GE-Baseball Fields	1	\$625,000	\$625,000
GE-Tennis Courts	4	\$108,000	\$432,000
GE-Basketball Courts	2	\$120,000	\$240,000
GE-Volleyball Courts	2	\$24,000	\$48,000
GE-Playgrounds (0-5 YO)	1	\$125,000	\$125,000
GE-Playgrounds (5-12 YO)	1	\$230,000	\$230,000
GE-Ramada (Saguaro)	1	\$168,000	\$168,000
GE-Ramada (Ocotillo)	1	\$84,000	\$84,000
GE-Ramada (Cottonwood)	1	\$84,000	\$84,000
GE-Restrooms	1	\$420,000	\$420,000
GE-Parking Lot	3	\$525,938	\$1,577,814
FP-Splash Pad	1	\$480,000	\$480,000
FP-Great Lawn	1	\$475,000	\$475,000
FP-Red Yucca Lawn	1	\$475,000	\$475,000
FP-Golden Barrel Lawn	1	\$475,000	\$475,000
FP-Disk Golf	1	\$15,284	\$15,284
FP-Walking Path	1	\$380,284	\$380,284
FP-Restrooms	1	\$420,000	\$420,000
FP-Playground (2-5 YO)	1	\$125,000	\$125,000
FP-Musical Playground	1	\$230,000	\$230,000
FP-Playground (5-12 YO)	1	\$230,000	\$230,000
FP-Ramada (Kiwanis)	1	\$168,000	\$168,000
FP-Ramada (Red Yucca)	1	\$84,000	\$84,000
FP-Ramada (Chuparosa)	1	\$84,000	\$84,000
FP-Ramada (Golden Barrel)	1	\$84,000	\$84,000
FP-Ramada (Ironwood)	1	\$84,000	\$84,000
FP-Parking Lot	2	\$525,938	\$1,051,876
4P-Multi Use Field	2	\$475,000	\$950,000
4P-Parking Lot	2	\$525,938	\$1,051,876
4P-Playground (5-12 YO)	2	\$230,000	\$460,000
4P-Ramada	1	\$84,000	\$84,000
4P-Restrooms	1	\$420,000	\$420,000
4P-Softball Field	2	\$825,000	\$1,650,000
4P-Foot Bridge	1	\$750,000	\$750,000
4P-Tennis Court	2	\$108,000	\$216,000
DV-Dog Park	1	\$650,000	\$650,000
DV-Multi Use Field	3	\$475,000	\$1,425,000
DV-Parking Lot	1	\$525,938	\$525,938
DV-Playground (5-12 YO)	1	\$230,000	\$230,000
DV-Ramada	8	\$84,000	\$672,000
DV-Restroom	1	\$420,000	\$420,000
DV-Skate Park	1	\$414,000	\$414,000
Adero-Restroom	1	\$420,000	\$420,000
Adero-Parking Lot	1	\$525,938	\$525,938
Adero-Ramada	1	\$168,000	\$168,000
<b>Total</b>	<b>70</b>	<b>\$315,757</b>	<b>\$22,103,010</b>

1. Parks and Recreation Department, City of Fountain Hills.

The current residential level of service is 0.00226 amenities per resident, which was calculated by multiplying the 70 amenities by the residential proportionate share (93 percent) and dividing this amount by the current population (28,840). Similarly, the nonresidential level of service is 0.00089 units per job (5,521). Multiplying the average cost per amenity (\$315,757) by the residential and nonresidential levels of service results in a cost of \$712.75 per person and \$280.24 per job. Note that while the LOS standards shown are rounded to the fifth decimal place, the analysis does not round these figures. Therefore, the cost analysis calculations may not produce the same result if the reader replicates the calculations using the factors shown (due to the rounding of figures shown, not in the analysis).

**Figure PK5: Park Amenities Level-of-Service Standards**

Cost Allocation Factors	
Cost per Amenity	\$315,757

Level-of-Service Standards	
Existing Amenities	70
Residential	
Residential Share	93%
2018 Peak Population	28,840
Amenities per Person	0.00226
Cost per Person	\$712.75
Nonresidential	
Nonresidential Share	7%
2018 Jobs	5,521
Amenities per Job	0.00089
Cost per Job	\$280.24

## Development Fee Report – Plan-Based

The cost to prepare the Parks and Recreation IIP and Development Fees totals \$16,640. Fountain Hills plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new development from the Land Use Assumptions document, the cost per person is \$14.63 and the cost per job is \$2.39.

**Figure PK6: Development Fee Report Cost Allocation**

Necessary Public Service	Cost	Proportionate Share		Demand Unit	5-Year Change	Cost per Demand Unit
Parks and Recreation	\$16,640	Residential	93%	Population	1,058	\$14.63
		Nonresidential	7%	Jobs	487	\$2.39
Fire	\$16,640	Residential	81%	Population	1,058	\$12.74
		Nonresidential	19%	Jobs	487	\$6.50
Street	\$16,640	All Development	100%	VMT	11,512	\$1.45
Total	\$49,920					

## PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

*“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”*

As shown in Figure PK8, the Land Use Assumptions projects an additional 2,163 persons and 872 jobs over the next 10 years.

ARS § 9-463.05(E)(6) requires:

*“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”*

These projected service units are multiplied by the current levels of service for the IIP components shown in Figures PK7 and PK8. New development will demand an additional 10.3 acres of developed park land, and 5.7 additional park amenities over the next 10 years. The park improvements and recreational facility totals demanded by new development multiplied by the respective costs suggests the Town will need to spend \$2.19 million on new park improvements to accommodate projected demand, as shown in the bottom of Figure PK9.

**Figure PK7: Projected Demand for Developed Park Land**

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Developed Park Land	0.00410 Developed Acres	per Person	\$40,000
	0.00161 Developed Acres	per Job	

Need for Developed Park Land					
Year	Population	Jobs	Residential Acres	Nonresidential Acres	Total Acres
2018	28,840	5,521	118.1	8.9	127.0
2019	29,048	5,600	119.0	9.0	128.0
2020	29,258	5,789	119.8	9.3	129.1
2021	29,470	5,861	120.7	9.4	130.1
2022	29,683	5,934	121.6	9.6	131.1
2023	29,898	6,008	122.4	9.7	132.1
2024	30,115	6,083	123.3	9.8	133.1
2025	30,334	6,159	124.2	9.9	134.1
2026	30,555	6,236	125.1	10.0	135.2
2027	30,778	6,314	126.0	10.2	136.2
2028	31,003	6,393	127.0	10.3	137.3
10-Yr Increase	2,163	872	8.9	1.4	10.3

Growth-Related Expenditures	\$354,274	\$56,169	\$410,443
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**Figure PK8: Projected Demand for Park Amenities**

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Park Amenities	0.00226 Units	per Person	\$315,757
	0.00089 Units	per Job	

Need for Park Amenities					
Year	Population	Jobs	Residential Units	Nonresidential Units	Total Units
2018	28,840	5,521	65.1	4.9	70.0
2019	29,048	5,600	65.6	5.0	70.5
2020	29,258	5,789	66.0	5.1	71.2
2021	29,470	5,861	66.5	5.2	71.7
2022	29,683	5,934	67.0	5.3	72.3
2023	29,898	6,008	67.5	5.3	72.8
2024	30,115	6,083	68.0	5.4	73.4
2025	30,334	6,159	68.5	5.5	73.9
2026	30,555	6,236	69.0	5.5	74.5
2027	30,778	6,314	69.5	5.6	75.1
2028	31,003	6,393	70.0	5.7	75.7
10-Yr Increase	2,163	872	4.9	0.8	5.7

Growth-Related Expenditures	\$1,541,442	\$244,390	\$1,785,832
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## **PARKS AND RECREATION FACILITIES IIP**

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ARS § 9-463.05(E)(3) requires:

*“A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved land use assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

Potential Parks and Recreation Facilities that Fountain Hills may use development fees for in order to accommodate new development over the next 10 years are shown in Figure PK9.

**Figure PK9: Parks & Recreation Facilities Infrastructure Improvements Plan**

Necessary Public Services	Timeframe	Cost
Developed Park Land	2019-2028	\$410,443
Park Amenities	2019-2028	\$1,785,832
	Total	\$2,196,275

## PARKS AND RECREATION FACILITIES DEVELOPMENT FEES

### Revenue Credit/Offset

A revenue credit/offset is not necessary for the Parks and Recreation Facilities development fees because 10-year growth costs exceed the amount of revenue that is projected to be generated by development fees according to the Land Use Assumptions, as shown in Figure PK11.

### Proposed Parks and Recreation Facilities Development Fees

Infrastructure standards and cost factors for Parks and Recreation Facilities, including developed park land, park amenities, and the professional services cost for the IIP and Development Fee Report are summarized at the top of Figure PK10. The cost per service unit for Parks and Recreation Facilities development fees is \$891.19 per person and \$347.04 per job.

Parks and Recreation Facilities development fees for residential development are assessed according to the number of persons per household. For example, the single-family fee of \$1,916 is calculated using a cost per service unit of \$891.19 per person multiplied by a demand unit of 2.15 persons per household. Nonresidential development fees are calculated using jobs as the service unit. The fee of \$0.81 per square foot of commercial development is derived from a cost per service unit of \$347.04 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet, divided by 1,000 square feet.

**Figure PK10: Proposed Parks and Recreation Facilities Development Fees**

Fee Component	Cost per Person	Cost per Job
Developed Park Land	\$163.81	\$64.41
Park Amenities	\$712.75	\$280.24
Development Fee Report	\$14.63	\$2.39
<b>Total</b>	<b>\$891.19</b>	<b>\$347.04</b>

Residential Development	Development Fees per Unit			
Development Type	Persons per Household <sup>1</sup>	Proposed Fees	Current Fees	Increase / Decrease
Single Family	2.15	\$1,916	\$1,301	\$615
Multi-Family	1.66	\$1,479	\$1,301	\$178

Nonresidential Development	Development Fees per Square Foot			
Development Type	Jobs per 1,000 Sq Ft <sup>1</sup>	Proposed Fees	Current Fees	Increase / Decrease
Industrial	1.63	\$0.56	\$0.00	\$0.56
Commercial	2.34	\$0.81	\$0.00	\$0.81
Institutional	0.93	\$0.32	\$0.00	\$0.32
Office	2.97	\$1.03	\$0.00	\$1.03

1. See Land Use Assumptions



## FORECAST OF PARKS AND RECREATION FACILITIES DEVELOPMENT FEE REVENUES

Appendix C contains the forecast of revenues required by Arizona's Enabling Legislation. The top of Figure PK11 summarizes the growth-related cost of infrastructure in Fountain Hills over the next 10 years (\$2.21 million). Fountain Hills should receive approximately \$2.21 million in Parks and Recreation Facilities development fee revenue over the next 10 years if actual development matches the Land Use Assumptions.

**Figure PK11: Projected Parks and Recreation Facilities Development Fee Revenue**

Fee Component	Growth Share	Existing Share	Total
Developed Park Land	\$410,443	\$0	\$410,443
Park Amenities	\$1,785,832	\$0	\$1,785,832
Development Fee Report	\$16,640	\$0	\$16,640
<b>Total</b>	<b>\$2,212,915</b>	<b>\$0</b>	<b>\$2,212,915</b>

		Avg Residential \$1,827 per unit	Industrial \$0.56 per sq. ft.	Commercial \$0.81 per sq. ft.	Institutional \$0.32 per sq. ft.	Office \$1.03 per sq. ft.
Year		Housing Units	KSF	KSF	KSF	KSF
Base	2018	13,268	280	1,212	505	593
Year 1	2019	13,369	282	1,226	514	604
Year 2	2020	13,472	284	1,255	540	636
Year 3	2021	13,575	285	1,273	551	642
Year 4	2022	13,679	286	1,291	563	647
Year 5	2023	13,784	288	1,310	575	653
Year 6	2024	13,890	289	1,330	587	659
Year 7	2025	13,997	290	1,349	599	664
Year 8	2026	14,105	291	1,369	611	670
Year 9	2027	14,213	292	1,389	624	676
Year 10	2028	14,323	293	1,409	637	682
10-Year Increase		1,055	13	197	132	89
Projected Revenue		\$1,911,191	\$7,319	\$159,645	\$42,443	\$91,512

Projected Fee Revenue	\$2,212,110
Total Expenditures	\$2,212,915

## **FIRE FACILITIES INFRASTRUCTURE IMPROVEMENTS PLAN**

ARS § 9-463.05 (T)(7)(f) defines the facilities and assets that can be included in the Fire Facilities IIP:

*“Fire and police facilities, including all appurtenances, equipment and vehicles. Fire and police facilities do not include a facility or portion of a facility that is used to replace services that were once provided elsewhere in the municipality, vehicles and equipment used to provide administrative services, helicopters or airplanes or a facility that is used for training firefighters or officers from more than one station or substation.”*

The Fire Facilities IIP and Development Fees includes components for fire apparatus, fire equipment, and the cost of professional services for preparing the Fire Facilities IIP and related Development Fee Report. An incremental expansion methodology is used for fire apparatus and fire equipment, and a plan-based methodology is used for the Development Fee Report.

### **Service Area**

The Town of Fountain Hills’ Fire Department strives to provide a uniform response time townwide, and its fire services operate as an integrated network. Depending on the number and type of calls, apparatus can be dispatched townwide from any of the stations. Therefore, the Fire Facilities IIP uses a townwide service area.

## Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. TischlerBise recommends functional population to allocate the cost of fire facilities to residential and nonresidential development. Functional population is similar to what the U.S. Census Bureau calls "daytime population," by accounting for people living and working in a jurisdiction, but also considers commuting patterns and time spent at home and at nonresidential locations. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states. OnTheMap data is used, as shown in Figure F1, to derive Functional Population shares for Fountain Hills.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in Fountain Hills are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Fountain Hills are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Fountain Hills, the cost allocation for residential development is 81 percent while nonresidential development accounts for 19 percent of the demand for municipal facilities.

**Figure F1: Fire Proportionate Share**

	Demand Units in 2015	Demand Hours/Day	Person Hours	Proportionate Share
<b>Residential</b>				
Peak Population	28,282			
Residents Not Working	19,127	20	382,540	
Employed Residents	9,155			
Employed in Service Area	1,495	14	20,930	
Employed outside Service Area	7,660	14	107,240	
Residential Subtotal			510,710	81%
<b>Nonresidential</b>				
Non-working Residents	19,127	4	76,508	
Jobs in Service Area	4,424			
Residents Employed in Service Area	1,495	10	14,950	
Non-Resident Workers (inflow Commuters)	2,929	10	29,290	
Nonresidential Subtotal			120,748	19%
Total			631,458	100%

Source: U.S. Census Bureau, OnTheMap 6.5 Application and LEHD Origin-Destination Employment Statistics, 2015.

## **RATIO OF SERVICE UNITS TO DEVELOPMENT UNITS**

ARS § 9-463.05(E)(4) requires:

*“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial/retail, industrial, and office/other services.”*

Figure F2 displays the ratio of service units to various types of land uses for residential and nonresidential development. For residential development, the table displays the persons per household for single-family (or single unit) and multi-family units. For nonresidential development, the table displays the number of employees per thousand square feet of floor area for four different types of nonresidential development.

**Figure F2: Persons Per Housing Type and Nonresidential Jobs per Demand Unit**

Residential Development	
Development Type	Persons per Household <sup>1</sup>
Single Family	2.15
Multi-Family	1.66

Nonresidential Development	
Development Type	Jobs per 1,000 Sq. Ft <sup>1</sup>
Industrial	1.63
Commercial	2.34
Institutional	0.93
Office	2.97

1. See Land Use Assumptions

## **ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES**

ARS § 9-463.05(E) (1) requires:

*“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

ARS § 9-463.05(E)(2) requires:

*“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

## Fire Apparatus – Incremental Expansion

The inventory summary of Fountain Hills’s fire apparatus is displayed in Figure F3. The Fountain Hills Fire Department owns 6 apparatus, which have a total replacement cost of \$1.49 million. Dividing the total cost by the total number of units yields an average cost per unit of \$248,333.

The current residential level of service is 0.00017 apparatus per resident, which was obtained by multiplying the 6 units by the residential proportionate share (81 percent) and dividing this amount by the current population (28,840). Similarly, the nonresidential level of service is 0.00021 units per job. Multiplying the average cost per unit (\$248,333) by the residential and nonresidential levels of service results in a cost per person of \$41.85 and \$51.28 per job. Note that while the LOS standards shown are rounded to the fifth decimal place, the analysis does not round these figures. Therefore, the cost analysis calculations may not produce the same result if the reader replicates the calculations using the factors shown (due to the rounding of figures shown, not in the analysis).

**Figure F3: Fire Apparatus Level-of-Service Standards**

Description	Units	Unit Cost	Replacement Cost
Engines	2	\$500,000	\$1,000,000
Brush Truck	2	\$200,000	\$400,000
Command Vehicle	2	\$45,000	\$90,000
Total	6	\$248,333	\$1,490,000

Cost Allocation Factors	
Cost per Apparatus	\$248,333

Level-of-Service Standards	
Existing Apparatus	6
Residential	
Residential Share	81%
2018 Peak Population	28,840
Apparatus per Person	0.00017
Cost per Person	\$41.85
Nonresidential	
Nonresidential Share	19%
2018 Jobs	5,521
Apparatus per Job	0.00021
Cost per Job	\$51.28

## Fire Equipment – Incremental Expansion

The inventory summary of Fountain Hills’s fire equipment including defibrillators and multi-band radios is displayed in Figure F4. The Fountain Hills Fire Department owns 25 defibrillators, which have a total replacement cost of \$23,750 and seven multi-band radio units with a total replacement cost of \$56,000. Dividing the total cost by the total number of units yields an average cost of \$2,492 per unit.

The current residential level of service is 0.0009 units per resident, which was obtained by multiplying the 32 units by the residential proportionate share (81 percent) and dividing this amount by the current population (28,840). Similarly, the nonresidential level of service is 0.0011 units per job. Multiplying the average cost per unit (\$2,492) by the residential and nonresidential levels of service results in a cost per person of \$2.24 and \$2.74 per job. Note that while the LOS standards shown are rounded to the fourth decimal place, the analysis does not round these figures. Therefore, the cost analysis calculations may not produce the same result if the reader replicates the calculations using the factors shown (due to the rounding of figures shown, not in the analysis).

**Figure F4: Fire Equipment Inventory and Level of Service Standards**

Description	Units	Unit Cost	Replacement Cost
Defibrillators	25	\$950	\$23,750
Multi-Band Radio	7	\$8,000	\$56,000
Total	32	\$2,492	\$79,750

Cost Allocation Factors	
Cost per unit	\$2,492

Level-of-Service Standards	
Existing units	32
Residential	
Residential Share	81%
2018 Peak Population	28,840
Units per Person	0.0009
Cost per Person	\$2.24
Nonresidential	
Nonresidential Share	19%
2018 Jobs	5,521
Units per Job	0.0011
Cost per Job	\$2.74

## Development Fee Report – Plan-Based

The cost to prepare the Fire Facilities IIP and Development Fee Report totals \$16,640. Fountain Hills plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential and nonresidential development from the Land Use Assumptions document, the cost is \$12.74 per person and \$6.50 per job.

**Figure F5: Development Fee Report Cost Allocation**

Necessary Public Service	Cost	Proportionate Share		Demand Unit	5-Year Change	Cost per Demand Unit
Parks and Recreation	\$16,640	Residential	93%	Population	1,058	\$14.63
		Nonresidential	7%	Jobs	487	\$2.39
Fire	\$16,640	Residential	81%	Population	1,058	\$12.74
		Nonresidential	19%	Jobs	487	\$6.50
Street	\$16,640	All Development	100%	VMT	11,512	\$1.45
Total	\$49,920					

## PROJECTED SERVICE UNITS AND PROJECTED DEMAND FOR SERVICES

ARS § 9-463.05(E)(5) requires:

*“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”*

The Land Use Assumptions projects an additional 2,163 persons and 872 jobs over the next 10 years.

ARS § 9-463.05(E)(6) requires:

*“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”*

As shown in Figures F6 and F7, new development will demand less than one apparatus, and 2.9 units of equipment. The 10-year total of the projected demand for fire facilities is multiplied by the cost per unit to determine the total cost to accommodate the projected demand over the next 10 years. The cost for the additional apparatus is \$135,220, and the cost for the additional equipment is \$7,237 – for a total capital cost of \$142,458.

**Figure F6: Projected Demand for Fire Apparatus**

Type of Infrastructure	Level of Service		Demand Unit	Cost per Unit
Fire Apparatus	0.00017 Units		per Person	\$248,333
	0.00021 Units		per Job	

Need for Fire Apparatus					
Year	Peak Population	Jobs	Residential	Nonresidential	Total Units
2018	28,840	5,521	4.9	1.1	6.0
2019	29,048	5,600	4.9	1.2	6.1
2020	29,258	5,789	4.9	1.2	6.1
2021	29,470	5,861	5.0	1.2	6.2
2022	29,683	5,934	5.0	1.2	6.2
2023	29,898	6,008	5.0	1.2	6.3
2024	30,115	6,083	5.1	1.3	6.3
2025	30,334	6,159	5.1	1.3	6.4
2026	30,555	6,236	5.1	1.3	6.4
2027	30,778	6,314	5.2	1.3	6.5
2028	31,003	6,393	5.2	1.3	6.5
10-Yr Increase	2,163	872	0.4	0.2	0.5

Growth-Related Expenditures	\$90,503	\$44,717	\$135,220
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**Figure F7: Projected Demand for Fire Equipment**

Type of Infrastructure	Level of Service		Demand Unit	Cost per Unit
Fire Equipment	0.0009 Units		per Person	\$2,492
	0.0011 Units		per Job	

Need for Fire Equipment					
Year	Peak Population	Jobs	Residential	Nonresidential	Total Units
2018	28,840	5,521	25.9	6.1	32.0
2019	29,048	5,600	26.1	6.2	32.3
2020	29,258	5,789	26.3	6.4	32.7
2021	29,470	5,861	26.5	6.5	32.9
2022	29,683	5,934	26.7	6.5	33.2
2023	29,898	6,008	26.9	6.6	33.5
2024	30,115	6,083	27.1	6.7	33.8
2025	30,334	6,159	27.3	6.8	34.0
2026	30,555	6,236	27.5	6.9	34.3
2027	30,778	6,314	27.7	7.0	34.6
2028	31,003	6,393	27.9	7.0	34.9
10-Yr Increase	2,163	872	1.9	1.0	2.9

Growth-Related Expenditures	\$4,844	\$2,393	\$7,237
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## **FIRE FACILITIES IIP**

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ARS § 9-463.05(E)(3) requires:

*“A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved land use assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

Potential Fire Facilities that Fountain Hills may use development fees for in order to accommodate new development over the next 10 years are shown in Figure F8. Additional apparatus and equipment will be procured as necessitated by growth.

**Figure F8: Necessary Fire Improvements and Expansions (10-Yr Total)**

Necessary Public Services	Timeframe	Cost
Fire Apparatus & Equipment	2020-2028	\$142,458

## FIRE FACILITIES DEVELOPMENT FEES

### Revenue Credit/Offset

A revenue credit/offset is not necessary for the Fire Facilities development fees because 10-year growth costs exceed the amount of revenue that is projected to be generated by development fees according to the Land Use Assumptions, as shown in Figure F10.

### Proposed Fire Facilities Development Fees

Infrastructure standards and cost factors for Fire Facilities are summarized at the top of Figure F9. The cost per service unit for Fire Facilities development fees is \$56.83 per person and \$60.52 per job.

Fire Facilities development fees for residential development are assessed according to the number of persons per household. For example, the single-family fee of \$122 is calculated using a cost per service unit of \$56.83 per person multiplied by a demand unit of 2.15 persons per household. Nonresidential development fees are calculated using jobs as the service unit. The fee of \$0.14 per square foot of commercial development is derived from a cost per service unit of \$60.52 per job multiplied by a demand unit of 2.34 jobs per 1,000 square feet, divided by 1,000 square feet.

**Figure F9: Proposed Fire Facilities Development Fees**

Fee Component	Cost per Person	Cost per Job
Fire Apparatus	\$41.85	\$51.28
Fire Equipment	\$2.24	\$2.74
Development Fee Report	\$12.74	\$6.50
Total	\$56.83	\$60.52

Residential Development	Development Fees per Unit			
Development Type	Persons per Household <sup>1</sup>	Proposed Fees	Current Fees	Increase / Decrease
Single Family	2.15	\$122	\$300	(\$178)
Multi-Family	1.66	\$94	\$300	(\$206)

Nonresidential Development	Development Fees per Square Foot			
Development Type	Jobs per 1,000 Sq. Ft <sup>1</sup>	Proposed Fees	Current Fees	Increase / Decrease
Industrial	1.63	\$0.10	\$0.24	(\$0.14)
Commercial	2.34	\$0.14	\$0.24	(\$0.10)
Institutional	0.93	\$0.06	\$0.24	(\$0.19)
Office	2.97	\$0.18	\$0.24	(\$0.06)

1. See Land Use Assumptions.

## FORECAST OF FIRE FACILITIES DEVELOPMENT FEE REVENUES

Appendix C contains the forecast of revenues required by Arizona's Enabling Legislation. Revenue projections shown below assume implementation of the proposed Fire Facilities development fees and that development over the next 10 years is consistent with the Land Use Assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the development fee revenue. As shown in Figure F10, the 10-year projected development fee revenue of \$159,012 is approximately equal to the 10-year growth cost of \$159,098.

**Figure F10: Projected Fire Facilities Development Fee Revenue**

Fee Component	Growth Share	Existing Share	Total
Fire Apparatus	\$135,220	\$0	\$135,220
Fire Equipment	\$7,237	\$0	\$7,237
Development Fee Report	\$16,640	\$0	\$16,640
<b>Total</b>	<b>\$159,098</b>	<b>\$0</b>	<b>\$159,098</b>

		Avg Residential \$116 per unit	Industrial \$0.10 per sq. ft.	Commercial \$0.14 per sq. ft.	Institutional \$0.06 per sq. ft.	Office \$0.18 per sq. ft.
Year		Housing Units	KSF	KSF	KSF	KSF
Base	2018	13,268	280	1,212	505	593
Year 1	2019	13,369	282	1,226	514	604
Year 2	2020	13,472	284	1,255	540	636
Year 3	2021	13,575	285	1,273	551	642
Year 4	2022	13,679	286	1,291	563	647
Year 5	2023	13,784	288	1,310	575	653
Year 6	2024	13,890	289	1,330	587	659
Year 7	2025	13,997	290	1,349	599	664
Year 8	2026	14,105	291	1,369	611	670
Year 9	2027	14,213	292	1,389	624	676
Year 10	2028	14,323	293	1,409	637	682
10-Year Increase		1,055	13	197	132	89
Projected Revenue		\$108,826	\$1,261	\$26,429	\$7,051	\$15,446

Projected Fee Revenue	\$159,012
Total Expenditures	\$159,098

## STREET FACILITIES INFRASTRUCTURE IMPROVEMENTS PLAN

ARS § 9-463.05 (T)(7)(e) defines the facilities and assets that can be included in the Street Facilities IIP:

*“Street facilities located in the service area, including arterial or collector streets or roads that have been designated on an officially adopted plan of the municipality, traffic signals and rights-of-way and improvements thereon.”*

The Street Facilities IIP includes components for arterial street improvements, improved intersections, and the cost of professional services for preparing the Street Facilities IIP and related Development Fee Report. An incremental expansion methodology is used for improved intersections, and a plan-based methodology is used for arterial improvements and the Development Fee Report.

### Service Area

Fountain Hills’ arterial street network is designed to efficiently move traffic throughout the town; therefore, the service area for the Street Facilities IIP and Development Fees is townwide.

A traffic analysis or alternative rational method may be used to identify specific off-site improvements as well as mitigation measures for development project impacts (intersections, adjacent roadways, etc.). Such project mitigation measures may be executed by the project, the Town of Fountain Hills, or by in-lieu payment by the project. The means and methods of execution may be identified and provided for by Development agreement, or conditions of approval for development plan review and permitting, or by any other mutually acceptable instrument between the development project and Town of Fountain Hills.

### Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to provide necessary public services to the development. Trip length, trip generation rates, and trip adjustment factors are used to determine the proportionate impact of residential, commercial, office, and industrial land uses on the Town’s street network.

## RATIO OF SERVICE UNITS TO DEVELOPMENT UNITS

ARS § 9-463.05(E)(4) requires:

*“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”*

### Service Units

The appropriate service unit for the Street Facilities development fees is vehicle miles of travel (VMT). VMT creates the link between supply (roadway capacity) and demand (traffic generated by new development). Components used to determine VMT include: trip generation rates, adjustments for commuting patterns and pass-by trips, and trip length weighting factors.

**Figure S1: Summary of Service Units**

Residential Development					
Development Type	Avg Wkdy Veh Trip Ends <sup>1</sup>	Trip Rate Adjustment	Trip Length Adjustment	Average Miles per Trip	VMT
Single Family	7.29	63%	121%	2.97	16.50
Multi-Family	3.63	63%	121%	2.97	8.22

Nonresidential Development					
Development Type	Avg Wkdy Veh Trip Ends <sup>1</sup>	Trip Rate Adjustment	Trip Length Adjustment	Average Miles per Trip	VMT
Industrial	4.96	50%	73%	2.97	5.38
Commercial	37.75	33%	66%	2.97	24.42
Institutional	19.52	50%	73%	2.97	21.16
Office	9.74	50%	73%	2.97	10.56

1. TischlerBise Land Use Assumptions

### Trip Generation Rates

For nonresidential development, the trip generation rates are from the 10th edition of the reference book Trip Generation published by the Institute of Transportation Engineers (2017). A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). As an alternative to using the national average trip generation rate for residential development, the Institute of Transportation Engineers (ITE) publishes regression curve formulas that may be used to derive custom trip generation rates using local demographic data. This is explained in more detail in Appendix A: Land Use Assumptions.

## Adjustment for Commuting Patterns

To calculate Street Facilities Development Fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed further below, the development fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Residential development has a larger trip adjustment factor of 63 percent to account for commuters leaving Fountain Hills for work. According to the 2009 National Household Travel Survey, weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trips). As shown in Figure S2, the Census Bureau's web application OnTheMap indicates that 84 percent of resident workers traveled outside the Town for work in 2015. In combination, these factors ( $0.31 \times 0.50 \times 0.84 = .13$ ) support the additional 13 percent allocation of trips to residential development.

**Figure S2: Inflow/Outflow Analysis**

Trip Adjustment Factor for Commuters <sup>1</sup>	
Employed Residents	9,155
Residents Working in Fountain Hills	1,495
Residents Working Outside Fountain Hills (Commuters)	7,660
Percent Commuting out of Fountain Hills	84%
Additional Production Trips <sup>2</sup>	13%
Residential Trip Adjustment Factor	63%

1. U.S. Census Bureau, OnTheMap Application (version 6.5) and LEHD Origin-Destination Employment Statistics, 2015.

2. According to the National Household Travel Survey (2009)\*, published in December 2011 (see Table 30), home-based work trips are typically 30.99 percent of "production" trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, LED OnTheMap data from 2015 indicate that 84 percent of Fountain Hills' workers travel outside the town for work. In combination, these factors ( $0.3099 \times 0.50 \times 0.84 = 0.12964686$ ) account for 13 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (13 percent of production trips) for a total of 63 percent.

\*<http://nhts.ornl.gov/publications.shtml> ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

## Adjustment for Pass-By Trips

For commercial development, the trip adjustment factor is less than 50 percent because retail development and some services attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, the ITE data indicates that 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trips. These factors are shown to derive inbound vehicle trips for each type of nonresidential land use and are detailed in Figure S3.

## **ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES**

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ARS § 9-463.05(E)(1) requires:

*“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

### **Travel Demand Model**

The travel demand model inputs are used to derive level of service in Vehicle Miles of Travel and future demand for lane miles, improved intersections. A Vehicle Mile of Travel (VMT) is a measurement unit equal to one vehicle traveling one mile. In the aggregate, VMT is the product of vehicle trips multiplied by the average trip length. Based on estimates shown in Figure S3, existing infrastructure standards in Fountain Hills, using the average trip length of 8.97 miles, are 1.02 lane miles of arterials per 10,000 VMT (70 arterial lane miles / (685,788 VMT / 10,000)).

As shown on the lower right side of Figure S3, future development generates an additional 68,981 VMT over the next 10 years. To maintain the existing infrastructure standards, Fountain Hills needs 7.0 additional lane miles of arterials, 1.3 additional improved intersections to accommodate projected development over the next 10 years.

Figure S3: Projected Travel Demand

Development Type	ITE Code	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
Single Family	210	7.29	HU	63%	121%
Multi-Family	220	3.63	HU	63%	121%
Industrial	110	4.96	KSF	50%	73%
Commercial	820	37.75	KSF	33%	66%
Institutional	730	19.52	KSF	50%	73%
Office	710	9.74	KSF	50%	73%

Avg Trip Length (miles)	8.97
Vehicle Capacity Per Lane	9,800

		Base	1	2	3	4	5	10	10-Year
		2018	2019	2020	2021	2022	2023	2028	Increase
Development	Single Family Units	8,445	8,509	8,574	8,640	8,706	8,773	9,115	670
	Multi-Family Units	4,823	4,860	4,897	4,935	4,973	5,011	5,208	385
	Industrial KSF	280	282	284	285	286	288	293	13
	Commercial KSF	1,212	1,226	1,255	1,273	1,291	1,310	1,409	197
	Institutional KSF	505	514	540	551	563	575	637	132
	Office KSF	593	604	636	642	647	653	682	89
Avg Wkday Vehicle Trips	Single Family Trips	38,785	39,081	39,380	39,681	39,985	40,291	41,864	3,078
	Multi-Family Trips	11,030	11,114	11,200	11,286	11,373	11,460	11,910	880
	Residential Trips	49,815	50,196	50,580	50,967	51,357	51,751	53,773	3,958
	Industrial Trips	694	699	704	707	709	714	727	33
	Commercial Trips	15,098	15,273	15,634	15,858	16,083	16,319	17,553	2,454
	Institutional Trips	4,929	5,017	5,270	5,378	5,495	5,612	6,217	1,288
	Office Trips	2,888	2,941	3,097	3,127	3,151	3,180	3,321	434
	Nonresidential Trips	23,608	23,930	24,706	25,069	25,438	25,826	27,818	4,209
	Total Vehicle Trips	73,423	74,126	75,286	76,036	76,795	77,577	81,591	8,167
VMT	Vehicle Miles of Travel	685,788	691,918	700,938	707,379	713,889	720,557	754,769	68,981
	Annual Increase		6,130	9,020	6,441	6,510	6,668	6,978	
Demand	Arterial Lane Miles	70.0	70.6	71.5	72.2	72.8	73.5	77.0	7.0
	Annual Increase		0.6	0.9	0.7	0.6	0.7	0.7	0.7
	Improved Intersections	13.0	13.1	13.3	13.4	13.5	13.7	14.3	1.3
	Annual Increase		0.1	0.2	0.1	0.1	0.2	0.1	0.1



## Calibrated Travel Demand Model

Fountain Hills plans to construct 2.3 lane miles of arterials over the next 10 years to serve future development. Since Fountain Hills plans to build fewer than 7.0 lane miles, as shown in Figure S3, the average trip length of 8.97 miles is adjusted until the 10-year demand for arterials equals 2.3 lane miles – resulting in an average trip length of 2.97 miles on the planned arterial improvements. The 10-year increase in VMT on the planned arterial improvements equals 22,840 VMT.

**Figure S4: Revised Travel Demand**

Development Type	ITE Code	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
Single Family	210	7.29	HU	63%	121%
Multi-Family	220	3.63	HU	63%	121%
Industrial	150	4.96	KSF	50%	73%
Commercial	820	37.75	KSF	33%	66%
Institutional	730	19.52	KSF	50%	73%
Office	620	9.74	KSF	50%	73%
Assisted Living (per bed)	254	2.60	Bed	50%	73%
Hotel (per room)	310	8.36	Room	50%	73%

Avg Trip Length (miles)	2.970
Vehicle Capacity Per Lane	9,800

		Base	1	2	3	4	5	10	10-Year Increase
		2018	2019	2020	2021	2022	2023	2028	
Development	Single Family Units	8,445	8,509	8,574	8,640	8,706	8,773	9,115	670
	Multi-Family Units	4,823	4,860	4,897	4,935	4,973	5,011	5,208	385
	Industrial KSF	280	282	284	285	286	288	293	13
	Commercial KSF	1,212	1,226	1,255	1,273	1,291	1,310	1,409	197
	Institutional KSF	505	514	540	551	563	575	637	132
	Office KSF	593	604	636	642	647	653	682	89
Avg Wkday Vehicle Trips	Single Family Trips	38,785	39,081	39,380	39,681	39,985	40,291	41,864	3,078
	Multi-Family Trips	11,030	11,114	11,200	11,286	11,373	11,460	11,910	880
	Residential Trips	49,815	50,196	50,580	50,967	51,357	51,751	53,773	3,958
	Industrial Trips	694	699	704	707	709	714	727	33
	Commercial Trips	15,098	15,273	15,634	15,858	16,083	16,319	17,553	2,454
	Institutional Trips	4,929	5,017	5,270	5,378	5,495	5,612	6,217	1,288
	Office Trips	2,888	2,941	3,097	3,127	3,151	3,180	3,321	434
	Nonresidential Trips	23,608	23,930	24,706	25,069	25,438	25,826	27,818	4,209
VMT	Total Vehicle Trips	73,423	74,126	75,286	76,036	76,795	77,577	81,591	8,167
	Vehicle Miles of Travel	227,067	229,097	232,083	234,216	236,371	238,579	249,907	22,840
	Annual Increase		2,030	2,987	2,133	2,155	2,208	2,310	
Demand	Arterial Lane Miles	23.2	23.4	23.7	23.9	24.1	24.3	25.5	2.3
	Annual Increase		0.2	0.3	0.2	0.2	0.2	0.2	0.2
	Improved Intersections	13.0	13.1	13.3	13.4	13.5	13.7	14.3	1.3
	Annual Increase		0.1	0.2	0.1	0.1	0.2	0.1	0.1

ARS § 9-463.05(E)(3) requires:

*“A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved land use assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.”*

### Arterial Improvements – Plan-Based

Fountain Hills plans to construct 2.3 lane miles of arterials over the next 10 years. Shown below in Figure S5, Fountain Hills staff identified the total cost and any other funding for the project – this results in \$1,828,000 in eligible costs. Based on the eligible cost of arterial improvements and the 10-year VMT increase, the cost for arterial improvements is \$80.04 per VMT (\$1,828,000 / 22,840 additional VMT).

**Figure S5: Planned Arterial Improvements**

Arterial Street Improvements		New Lane Miles	Total Cost	Other Funding	DIF Eligible Cost
1W	Shea Blvd Widening	2.30	\$4,000,000	\$2,172,000	\$1,828,000

DIF Eligible Cost	\$1,828,000
10-Year VMT Increase	22,840
Cost per VMT	\$80.04

### Improved Intersections – Incremental Expansion

Fountain Hills’ current level of service for improved intersections is 0.57252 improved intersections per 10,000 VMT (13 intersections / (227,067 VMT / 10,000)), and Fountain Hills plans to maintain this level of service over the next 10 years. As shown in Figure S4, Fountain Hills needs to construct 1.3 additional improved intersections to maintain this standard over the next 10 years ((22,840 additional VMT / 10,000) X 0.57252 improved intersections per 10,000 VMT). Based on recent improved intersection project costs, Fountain Hills staff estimates future improved intersections will have an average cost of \$625,000 per intersection. Fountain Hills may use development fees to fund any growth-related improved intersection within the service area. The cost for improved intersections is \$35.78 per VMT (\$625,000 per improved intersection X 0.57252 improved intersections per 10,000 VMT).

**Figure S6: Existing Improved Intersection Level-of-Service and Cost Factors**

Cost Allocation Factors	
Cost per Improved Intersection <sup>1</sup>	\$625,000

Level-of-Service Standards	
Existing Improved Intersections	13.0
2018 VMT	227,067
Improved Int per 10,000 VMT	0.57252
Cost per VMT	\$35.78

1. Town of Fountain Hills, Arizona

## Development Fee Report – Plan-Based

The cost to prepare the Street Facilities IIP and Development Fee Report totals \$16,640. Fountain Hills plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential and nonresidential development from the Land Use Assumptions document, the cost is \$1.45 per VMT.

**Figure S7: Development Fee Report Cost Allocation**

Necessary Public Service	Cost	Proportionate Share		Demand Unit	5-Year Change	Cost per Demand Unit
Parks and Recreation	\$16,640	Residential	93%	Population	1,058	\$14.63
		Nonresidential	7%	Jobs	487	\$2.39
Fire	\$16,640	Residential	81%	Population	1,058	\$12.74
		Nonresidential	19%	Jobs	487	\$6.50
Street	\$16,640	All Development	100%	VMT	11,512	\$1.45
Total	\$49,920					

## STREET FACILITIES DEVELOPMENT FEES

### Revenue Credit/Offset

A revenue credit/offset is not necessary for the Street Facilities development fees because 10-year growth costs do not substantially exceed the amount of revenue that is projected to be generated by development fees according to the Land Use Assumptions, as shown in Figure S10.

### Proposed Street Facilities Development Fees

Infrastructure standards and cost factors for Street Facilities are summarized at the top of Figure S8. The cost per service unit for Street development fees is \$117.26 per VMT.

Street Facilities development fees for residential development are assessed according to VMT generated per unit. For example, the single-family fee of \$1,935 is calculated using a cost per service unit of \$117.26 per VMT multiplied by 2.97 miles per trip, multiplied by 7.29 average weekday vehicle trip ends, multiplied by 63 percent trip rate adjustment, multiplied by 121 percent trip length adjustment. Nonresidential development fees are calculated using VMT generated per square foot. The fee of \$2.86 per square foot of commercial development is calculated using a cost per service unit of \$117.26 per VMT multiplied by 2.97 miles per trip, multiplied by 37.75 average weekday vehicle trip ends, multiplied by 33 percent trip rate adjustment, multiplied by 66 percent trip length adjustment, divided by 1,000 square feet.

**Figure S8: Proposed Street Facilities Development Fees**

Fee Component	Cost per VMT
Arterial Improvements	\$80.04
Improved Intersections	\$35.78
Development Fee Report	\$1.45
<b>Total</b>	<b>\$117.26</b>

Average Miles per Trip	2.970
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Residential Development	Development Fees per Unit					
Development Type	Avg Wkdy Veh Trip Ends <sup>1</sup>	Trip Rate Adjustment	Trip Length Adjustment	Proposed Fees	Current Fees	Increase / Decrease
Single Family	7.29	63%	121%	\$1,935	\$0	\$1,935
Multi-Family	3.63	63%	121%	\$964	\$0	\$964

Nonresidential Development	Development Fees per Square Foot					
Development Type	Avg Wkdy Veh Trip Ends <sup>1</sup>	Trip Rate Adjustment	Trip Length Adjustment	Proposed Fees	Current Fees	Increase / Decrease
Industrial	4.96	50%	73%	\$0.63	\$0.00	\$0.63
Commercial	37.75	33%	66%	\$2.86	\$0.00	\$2.86
Institutional	19.52	50%	73%	\$2.48	\$0.00	\$2.48
Office	9.74	50%	73%	\$1.24	\$0.00	\$1.24

1. TischlerBise Land Use Assumptions

## PROJECTED STREET FACILITIES DEVELOPMENT FEE REVENUE

Projected fee revenue shown in Figure S9 is based on the development projections in the Land Use Assumptions (see Appendix C) and the updated Street Facilities development fees (see Figure S8). Expenditures on arterial improvements are derived from the anticipated need for approximately 2.3 new lane miles over the next 10 years (see Figure S4) at a cost of \$1,828,000 (see Figure S5). Expenditures on improved intersections are derived from the anticipated need for approximately 1.3 new improved intersections over the next 10 years at a cost of \$812,500. Anticipated development fee revenue is approximately \$2.6 million over the next 10 years, while expenditures are estimated at approximately \$2.6 million.

**Figure S9: Projected Street Facilities Development Fee Revenue**

		Fee Component		Growth Share	Existing Share	Total
		Arterial Improvements		\$1,828,000	\$0	\$1,828,000
		Improved Intersections		\$812,500	\$0	\$812,500
		Development Fee Report		\$16,640	\$0	\$16,640
		Total		\$2,657,140	\$0	\$2,657,140

		Single Family \$1,935 per unit	Multi-Family \$964 per unit	Industrial \$0.63 per SF	Commercial \$2.86 per SF	Institutional \$2.48 per SF	Office \$1.24 per SF
Year		Housing Units	Housing Units	KSF	KSF	KSF	KSF
Base	2018	8,445	4,823	280	1,212	505	593
Year 1	2019	8,509	4,860	282	1,226	514	604
Year 2	2020	8,574	4,897	284	1,255	540	636
Year 3	2021	8,640	4,935	285	1,273	551	642
Year 4	2022	8,706	4,973	286	1,291	563	647
Year 5	2023	8,773	5,011	288	1,310	575	653
Year 6	2024	8,840	5,050	289	1,330	587	659
Year 7	2025	8,908	5,089	290	1,349	599	664
Year 8	2026	8,977	5,128	291	1,369	611	670
Year 9	2027	9,046	5,168	292	1,389	624	676
Year 10	2028	9,115	5,208	293	1,409	637	682
10-Year Increase		670	385	13	197	132	89
Projected Revenue		\$1,289,018	\$368,429	\$8,379	\$560,609	\$325,643	\$109,830

Projected Fee Revenue	\$2,661,909
Total Expenditures	\$2,657,140

## APPENDIX A: LAND USE ASSUMPTIONS

### EXECUTIVE SUMMARY

For municipalities in Arizona, the state enabling legislation requires supporting documentation on land use assumptions, a plan for infrastructure improvements, and development fee calculations. This document contains the land use assumptions for the Town of Fountain Hills 2018 development fee update. Development fees must be updated every five years, making short-range projections the critical time frame. The Infrastructure Improvements Plan (IIP) is limited to 10 years for non-utility fees, thus a very long-range “build-out” analysis may not be used to derive development fees.

Arizona Revised Statutes (ARS) § 9-463.05 (T)(6) requires the preparation of a Land Use Assumptions document which shows:

*“Projections of change in land uses, densities, intensities and population for a specified service area over a period of at least 10 years and pursuant to the General Plan of the municipality.”*

TischlerBise prepared current demographic estimates and future development projections for both residential and nonresidential development that will be used in the Infrastructure Improvement Plan (IIP) and calculation of the development fees. Demographic data for FY 17-18 (beginning July 1, 2017) are used in calculating levels-of-service provided to existing development in the Town of Fountain Hills. Although long-range projections are necessary for planning infrastructure systems, a shorter time frame of five to 10 years is critical for the impact fees analysis. TischlerBise used compound growth rates to produce conservative projections that increase over time.

Arizona’s Development Fee Act requires fees to be updated at least every five years and limits the IIP to a maximum of 10 years for non-utility fees. Therefore, the use of a very long-range “build-out” analysis is no longer acceptable for deriving development fees in Arizona municipalities.

### SERVICE AREAS

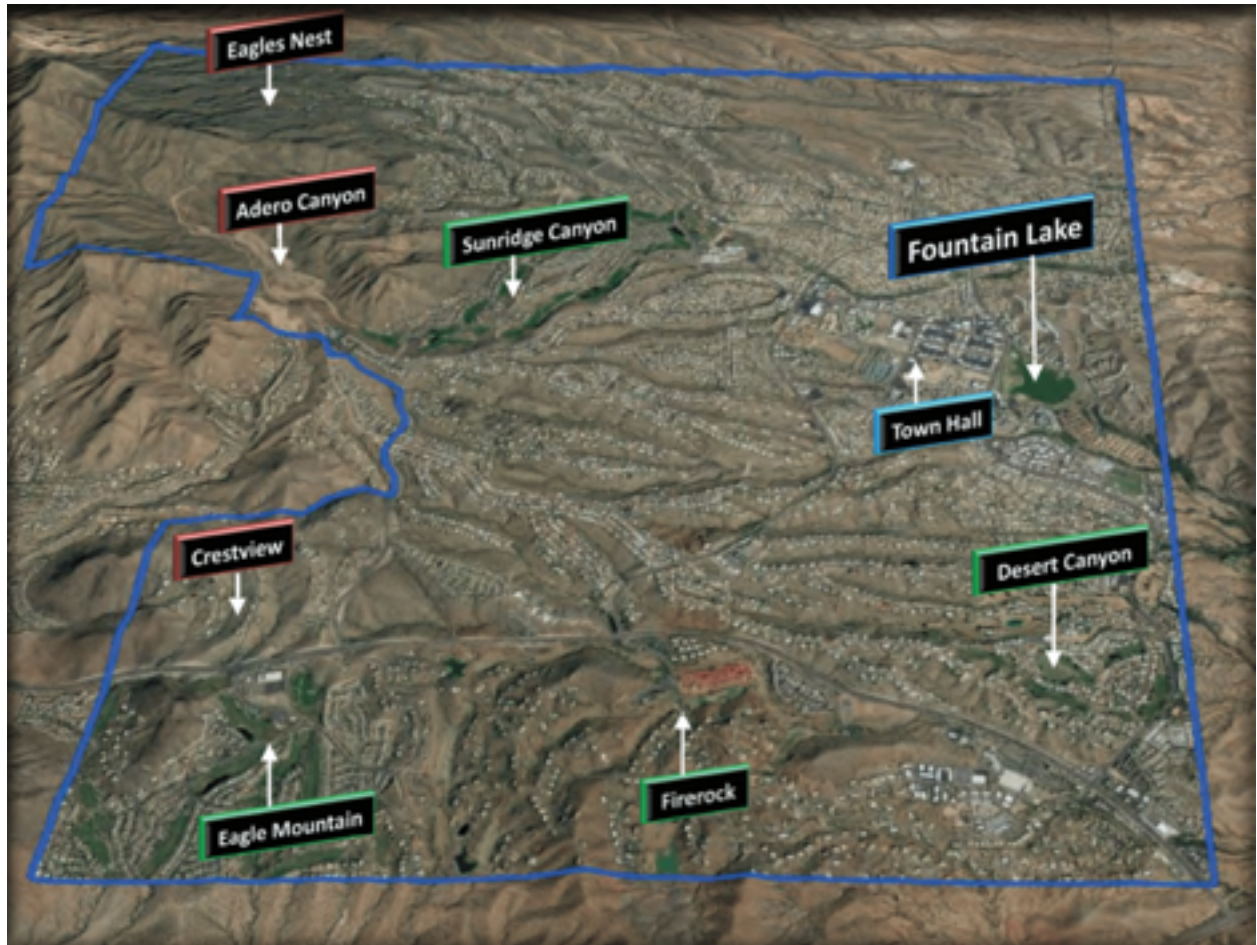
ARS § 9-463.05 defines “service area” as follows:

*“Any specified area within the boundaries of a municipality in which development will be served by necessary public services or facility expansions and within which a substantial nexus exists between the necessary public services or facility expansions and the development being served as prescribed in the infrastructure improvements plan.”*

The Town’s previous Land Use Assumptions, Infrastructure Improvement Plan and Development Study recommended three services areas, shown below in Figure A1.

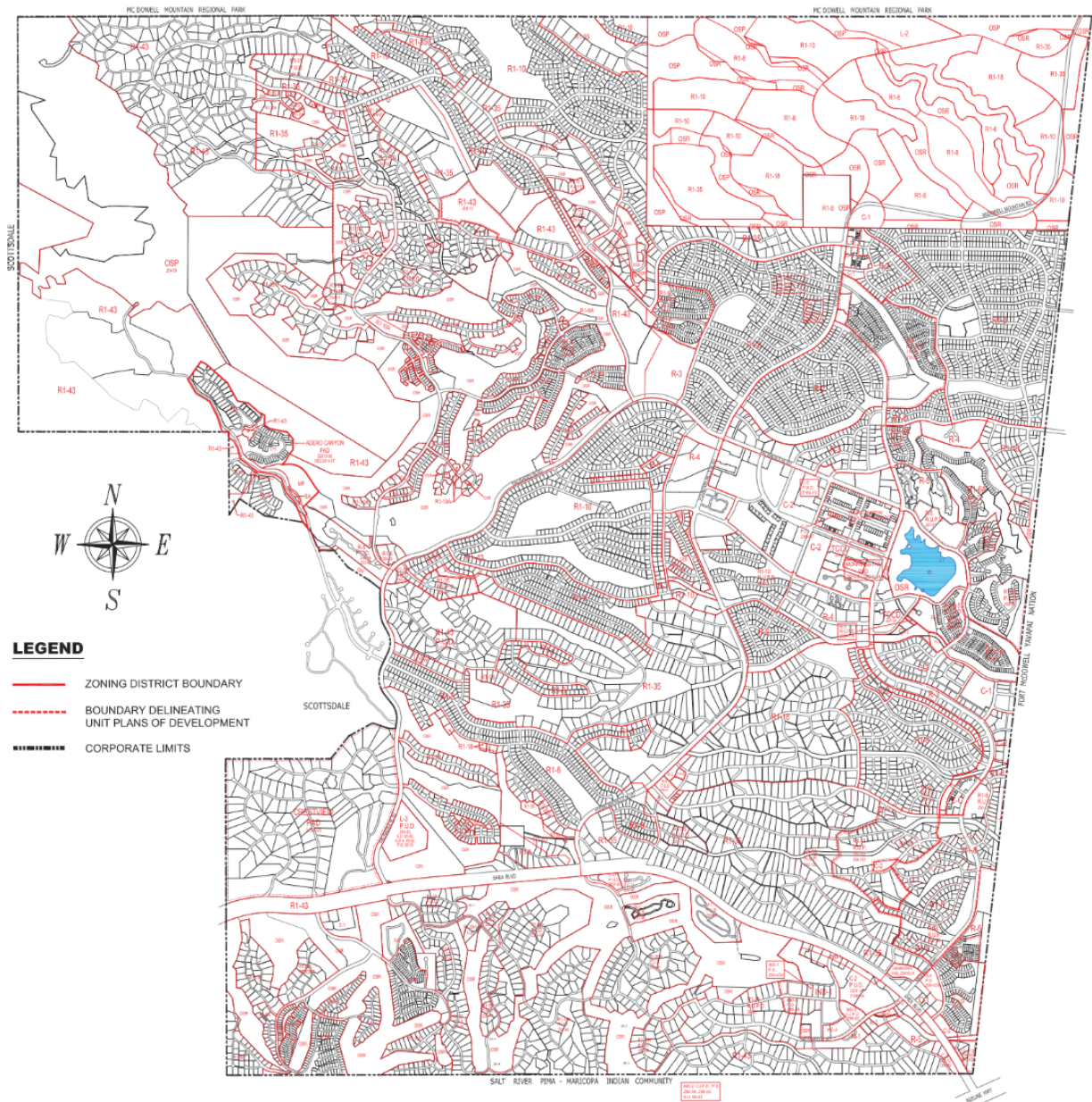


Figure A1: Current Development Fee Service Areas





### Figure A2: Proposed Development Fee Service Areas



Arizona Revised Statutes (ARS) 9-463.05(T)(7) requires the preparation of a Land Use Assumptions document, which shows:

*“projections of changes in land uses, densities, intensities and population for a specified service area over a period of at least ten years and pursuant to the General Plan of the municipality.”*

The Town of Fountain Hills, Arizona retained TischlerBise to analyze the impacts of development on its capital facilities and to calculate development impact fees based on that analysis. TischlerBise prepared current demographic estimates and future development projections for both residential and nonresidential development that will be used in the Infrastructure Improvements Plan (IIP) and calculation of the development fees. Current demographic data estimates for 2018 are used in calculating levels of service (LOS) provided to existing development in the Town of Fountain Hills. Although long-range projections are necessary for planning infrastructure systems, a shorter time frame of five to ten years is critical for the development fee analysis. Arizona’s Development Fee Act requires fees to be updated at least every five years and limits the IIP to a maximum of ten years. Therefore, the use of a very long-range “build-out” analysis is no longer acceptable for deriving development fees in Arizona municipalities.

### **SUMMARY OF GROWTH INDICATORS**

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Key land use assumptions for the Town of Fountain Hills development fee study are population, housing units, and employment projections. Based on information provided by staff, including the 2017 Town of Fountain Hills Land Use Analysis & Statistical Report, TischlerBise uses the Maricopa Association of Governments 2020-2030 growth rate of 0.87 percent, which is then converted to annual housing unit increases by using a persons per household factor of 2.05, as shown in Figure A2. For nonresidential development, the base year employment estimate is calculated from ESRI Business Analyst and uses MAG 2015-2030 estimated growth rates for each industry sector applied to the base year employment to project future employment. The employment estimate is converted into floor area based on average square feet per job multipliers. Four nonresidential development prototypes are discussed further below (see Figure A5 and related text). The projections contained in this document provide the foundation for the development impact fee study. These metrics are the service units and demand indicators used in the development impact fee study.

Development projections and growth rates are summarized in Figure A11. These projections will be used to estimate development fee revenue and to indicate the anticipated need for growth-related infrastructure. However, development fee methodologies are designed to reduce sensitivity to development projections in the determination of the proportionate-share fee amounts. If actual development is slower than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, Fountain Hills will receive an increase in fee revenue, but will also need to accelerate infrastructure improvements to keep pace with the actual rate of development. During the next 10 years, development projections indicate an average increase of 105 housing units per year, and an average increase of approximately 43,000 square feet of nonresidential floor area per year.

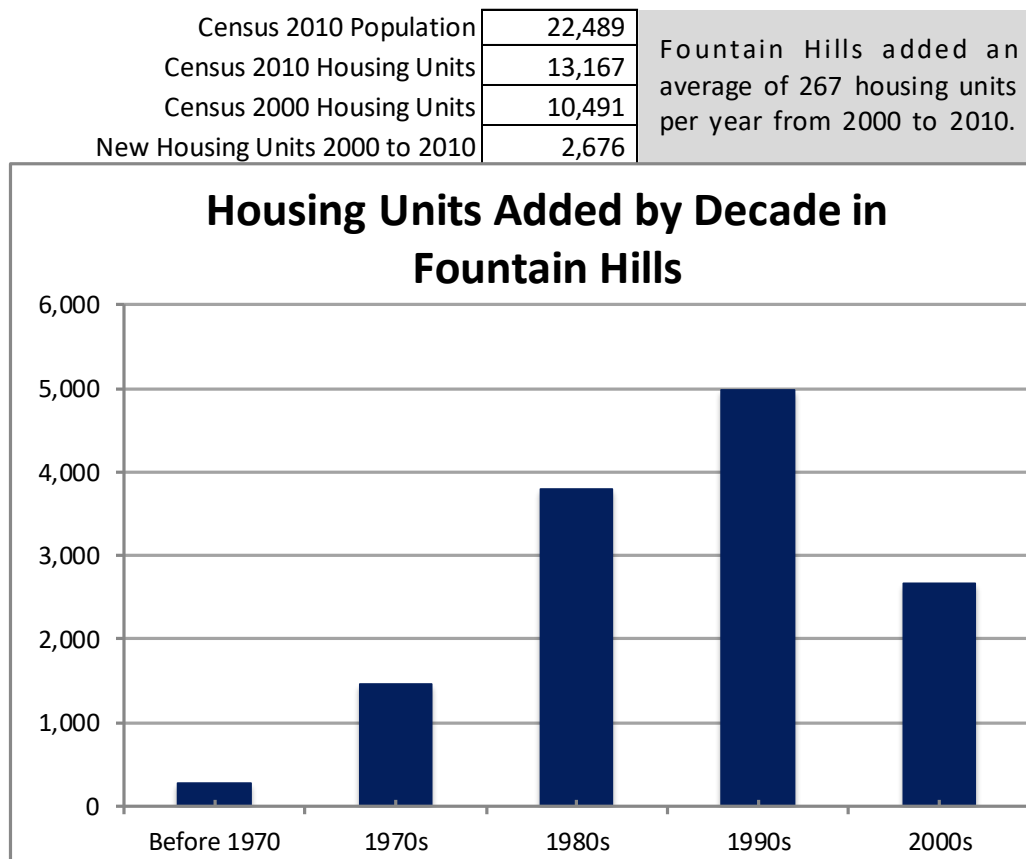
## RESIDENTIAL DEVELOPMENT

Current estimates and future projections of residential development are detailed in this section including population and housing units by type.

### Recent Residential Construction

Development fees require an analysis of current levels of service. For residential development, current levels of service are determined using estimates of population and housing units. Shown below, Figure A1 indicates the estimated number of housing units added by decade according to data obtained from the U.S. Census Bureau. Fountain Hills experienced strong growth in the 1990s and 2000s. From 2000 to 2010, Fountain Hills' housing inventory increased by an average of 267 units per year.

**Figure A1: Housing Units by Decade**



Source: U.S. Census Bureau, Census 2010 Summary File 1, Census 2000 Summary File 1, 2013-2017 5-Year American Community Survey (for 1990s and earlier, adjusted to yield total units in 2000).

## Household Size

According to the U.S. Census Bureau, a household is a housing unit occupied by year-round residents. Development fees often use per capita standards and persons per housing unit (PPHU) or persons per household (PPH) to derive proportionate share fee amounts. When PPHU is used in the fee calculations, infrastructure standards are derived using year-round population. When PPH is used in the fee calculations, the development fee methodology assumes a higher percentage of housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. To recognize the impacts of seasonal population, Fountain Hills should impose development fees for residential development according to the number of persons per household. This methodology assumes some portion of the housing stock will be vacant during the course of a year. According to the U.S. Census Bureau American Community Survey, Fountain Hills' vacancy rate was twenty-one percent in 2017.

Persons per household (PPH) calculations require data on population and the types of units by structure. The 2010 census did not obtain detailed information using a "long-form" questionnaire. Instead, the U.S. Census Bureau switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which has limitations due to sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). For development fees in Fountain Hills, detached stick-built units and attached units (commonly known as townhouses, which share a common sidewall, but are constructed on an individual parcel of land) are included in the "Single-Family Unit" category. The second residential category includes duplexes and all other structures with two or more units on an individual parcel of land. This category is referred to as "Multi-Family Unit." (Note: housing unit estimates from ACS will not equal decennial census counts of units. These data are used only to derive the custom PPHU factors for each type of unit).

Figure A2 below shows the 2013-2017 5-year ACS estimates for Fountain Hills. Single-family units averaged 2.15 persons per household (20,097 persons / 9,339 households) and multi-family units averaged 1.66 persons per household (3,881 persons / 2,338 households). In 2017, Fountain Hills' housing stock averaged 2.05 persons per household with a townwide vacancy rate of 21 percent.

**Figure A2: Persons per Housing Unit**

Units in Structure	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate
Single-Family Unit <sup>1</sup>	20,097	9,339	2.15	11,381	1.77	77.3%	18%
Multi-Family Unit <sup>2</sup>	3,881	2,338	1.66	3,334	1.16	22.7%	30%
Total	23,978	11,677	2.05	14,715	1.63		21%

Source: TischlerBise analysis and calculation based on U.S. Census Bureau, 2013-2017 American Community Survey, 5-Year Estimates.

1. Includes detached, attached (townhouse), and manufactured units.

2. Includes duplexes, structures with two or more units, and all other units.

## Seasonal Households

To account for seasonal residents, the analysis includes vacant households used for seasonal, recreational, or occasional use. According to 2017 ACS estimates shown in Figure A3, seasonal units account for 2,343 of Fountain Hills' 3,038 vacant units. With all seasonal units occupied, Fountain Hills' peak vacancy rate is 4.72 percent (14,020 peak households / 14,715 housing units). Applying Fountain Hills' occupancy factor of 2.05 persons per household to seasonal households provides a seasonal population estimate of 4,811 persons. Fountain Hills' peak population estimate for 2017 is 28,789 (23,978 population in households + 4,811 seasonal population).

**Figure A3: Seasonal Households**

<b>POPULATION</b>	
Year-Round Population	23,978
Housing Units	14,715
Vacant Housing Units	3,038
Vacancy Rate	20.65%
Households	11,677
Seasonal Households	2,343
Peak Households	14,020
Persons per Household	2.05
Population in Households	23,978
Seasonal Population	4,811
<b>Peak Population in 2017</b>	<b>28,789</b>

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

## Population Estimates

To accurately determine current and future population in Fountain Hills, TischlerBise compared population estimates and growth rates from American Community Survey data, Arizona Department of Administration (ADOA), the *Fountain Hills 2017 Land Use Analysis Report*, and Maricopa Association of Governments (MAG). In 2016 MAG released population projections for jurisdictions through 2050, along with annual updates of housing unit and population estimates. TischlerBise uses MAG's 2016 Socioeconomic Projections in conjunction with Fountain Hills staff-provided building permit data to derive the base year estimates of population and housing units. The *2017 Fountain Hills Land Use Analysis and Statistical Report* details housing by unit count and type current through December 31, 2017 allowing the study to establish 2018 as the base year for related projections. Further analysis of the past 20 years of building permit data shows that Fountain Hills has averaged 125 single family and 76 multi-family units per year over this time period, however growth has slowed substantially since 2010, in part due to a broader national economic condition. The resulting impact on growth in Fountain Hills has reduced average unit construction to 52 single family and 16 multi-family units per year between 2015 and 2018.



## Population Projections

Based on recent building permit trends and review of the *2017 Fountain Hills Land Use Analysis and Statistical Report*, TischlerBise projects an average annual increase of 106 housing units (67 single-family and 39 multi-family units) between 2018 and 2028. TischlerBise projects housing growth beyond 2018 using MAG's 2020-2030 population compound average annual growth rate of 0.87 percent and the 2017 ACS occupancy rate of 2.05 persons per household. Future households are distributed by type based on the existing housing mix detailed in the *2017 Fountain Hill's Land Use Analysis and Statistical Report*, 64 percent single family units and 36 percent multi-family units. The assumption on future housing mix is held constant over the 10-year forecast period, therefore, between 2018 and 2028, 64 percent of projected new units are single-family and 36 percent are multi-family.

For this study, it is assumed that the household size and seasonal population will remain constant. TischlerBise projects a 10-year increase of 2,163 persons, or an average of 216 persons annually, and a corresponding 10-year increase of 1,055 housing units, or an average of 106 units annually. The study assumes the total seasonal population of 4,811 will remain constant throughout the 10-year period.

Population and housing unit projections are used to illustrate the possible future pace of service demands, revenues, and expenditures. To the extent these factors change, the projected need for infrastructure will also change. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase at a corresponding rate. If development occurs at a slower rate than is projected, the demand for infrastructure will also decrease.

**Figure A4: Residential Development Projections**

	2018	2019	2020	2021	2022	2023	2028	10-Year Increase
	Base	1	2	3	4	5	10	
<b>Population</b>								
Household	24,029	24,237	24,447	24,658	24,872	25,087	26,192	2,163
Peak	28,840	29,048	29,258	29,470	29,683	29,898	31,003	2,163
<b>Housing Units</b>								
Single Family	8,445	8,509	8,574	8,640	8,706	8,773	9,115	670
Multi-Family	4,823	4,860	4,897	4,935	4,973	5,011	5,208	385
<b>Total Housing Units</b>	<b>13,268</b>	<b>13,369</b>	<b>13,472</b>	<b>13,575</b>	<b>13,679</b>	<b>13,784</b>	<b>14,323</b>	<b>1,055</b>

## NONRESIDENTIAL DEVELOPMENT

Current estimates and future projections of nonresidential development are detailed in this section including jobs and nonresidential floor area.

### Employment Estimates

In addition to data on residential development, the calculation of development impact fees requires data on employment (number of jobs) and nonresidential square footage in Fountain Hills. TischlerBise uses the term “jobs” to refer to employment by place of work. TischlerBise analyzed recent employment trends, reviewed data published by MAG, the U.S. Census Bureau, and ESRI Business Analyst<sup>1</sup>, and had discussions with Town staff.

TischlerBise estimates 2018 employment using 2015 MAG employment data and then applying MAG industry specific growth rates to subsequent years. Shown below in Figure A5, base year employment totals 5,521 jobs. Employment estimates are grouped into four categories: Industrial, Commercial / Retail, Institutional, and Office and Other Services. For the 2018 base year, employment estimates include 455 industrial jobs, 2,838 commercial / retail jobs, 469 institutional jobs, and 1,759 office and other services jobs. Estimated floor area uses square feet multipliers published by the Institute of Transportation Engineers. The conversion from employment to nonresidential floor area is discussed below.

**Figure A5: Estimated Employment and Distribution by Industry Type**

Nonresidential Category	2018 Jobs <sup>1</sup>	Percent of Total Jobs	Sq. Ft. per Job	2018 Estimated Floor Area <sup>2</sup>	Jobs per 1,000 Sq. Ft. <sup>2</sup>
Industrial <sup>3</sup>	455	8.2%	615	279,649	1.63
Commercial / Retail <sup>4</sup>	2,838	51.4%	427	1,211,769	2.34
Institutional <sup>5</sup>	469	8.5%	1,076	504,700	0.93
Office and Other Services <sup>6</sup>	1,759	31.9%	337	592,937	2.97
Total	5,521	100.0%		2,589,055	

1. TischlerBise calculation based on Maricopa Association of Governments 2015 and 2020 estimates.

2. Sq. Ft. per Job based on jobs and ITE 10th Edition (2017) multiplier.

3. Major sector is Construction.

4. Major sectors are Food Services and Retail Trade.

5. Major sectors are Educational Services and Public Administration.

6. Major sectors are Health Care and Real Estate Rental and Leasing.

<sup>1</sup> ESRI Business Summary Reports provide demographic and business data for geographic areas from sources including directory listings such as Yellow Pages and business white pages; annual reports; 10-K and Securities and Exchange Commission (SEC) information; federal, state, and municipal government data; business magazines; newsletters and newspapers; and information from the US Postal Service. To ensure accurate and complete information, ESRI conducts annual telephone verifications with each business listed in the database.

## Nonresidential Square Footage Estimates

To estimate current nonresidential floor area, ITE square feet per employee multipliers (Figure A6) are applied to 2018 employment estimates shown in Figure A5. For industrial development, light industrial (ITE 110) is the prototype for future development, with an average of 615 square feet per job. For future commercial / retail development, an average size shopping center (ITE 820) is a reasonable proxy with an average of 427 square feet per job. For future institutional development, elementary school (ITE 520) is a reasonable proxy with 1,076 square feet per job. The prototype for future office and other services development is a general office (ITE 710). This type of development averages approximately 337 square feet per job. Based on this methodology, TischlerBise estimates Fountain Hills has 2,589,055 square feet of nonresidential floor area.

**Figure A6: The Institute of Transportation Engineers, Employee and Building Area Ratios**

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit <sup>1</sup>	Wkdy Trip Ends Per Employee <sup>1</sup>	Emp Per Dmd Unit	Sq Ft Per Emp
<b>110</b>	<b>Light Industrial</b>	<b>1,000 Sq Ft</b>	<b>4.96</b>	<b>3.05</b>	<b>1.63</b>	<b>615</b>
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	3.93	2.47	1.59	628
150	Warehousing	1,000 Sq Ft	1.74	5.05	0.34	2,902
254	Assisted Living	bed	2.60	4.24	0.61	na
310	Hotel	room	8.36	14.34	0.58	na
320	Motel	room	3.35	25.17	0.13	na
<b>520</b>	<b>Elementary School</b>	<b>1,000 Sq Ft</b>	<b>19.52</b>	<b>21.00</b>	<b>0.93</b>	<b>1,076</b>
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
540	Community College	student	1.15	14.61	0.08	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	354
620	Nursing Home	bed	3.06	2.91	1.05	na
<b>710</b>	<b>General Office (average size)</b>	<b>1,000 Sq Ft</b>	<b>9.74</b>	<b>3.28</b>	<b>2.97</b>	<b>337</b>
720	Medical-Dental Office	1,000 Sq Ft	34.80	8.70	4.00	250
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
760	Research & Dev Center	1,000 Sq Ft	11.26	3.29	3.42	292
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
<b>820</b>	<b>Shopping Center (average size)</b>	<b>1,000 Sq Ft</b>	<b>37.75</b>	<b>16.11</b>	<b>2.34</b>	<b>427</b>

1. Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).



## Employment and Nonresidential Floor Area Projections

Future employment growth in Fountain Hills is based on Maricopa Association of Governments 2020—2030 employment projections, by industry. To project growth in nonresidential square footage, TischlerBise applies the previously discussed ITE square feet per employee multipliers to the projected increase in employment. The results of these calculations are shown in Figure A7. Over the next 10 years, Fountain Hills is projected to gain 872 jobs and add an estimated 431,000 square feet of nonresidential development.

**Figure A7: Nonresidential Development Projections**

	2018	2019	2020	2021	2022	2023	2028	10-Year Increase
	Base	1	2	3	4	5	10	
<b>Employment</b>								
Industrial	455	458	462	464	466	468	477	22
Commercial	2,838	2,871	2,938	2,981	3,025	3,069	3,300	462
Institutional	469	478	502	512	523	534	592	123
Office	1,759	1,793	1,887	1,904	1,920	1,937	2,024	265
<b>Total Employment</b>	<b>5,521</b>	<b>5,600</b>	<b>5,789</b>	<b>5,861</b>	<b>5,934</b>	<b>6,008</b>	<b>6,393</b>	<b>872</b>
<b>Nonresidential Floor Area (KSF)</b>								
Industrial	280	282	284	285	286	288	293	13
Commercial	1,212	1,226	1,255	1,273	1,291	1,310	1,409	197
Institutional	505	514	540	551	563	575	637	132
Office	593	604	636	642	647	653	682	89
<b>Total Floor Area</b>	<b>2,590</b>	<b>2,626</b>	<b>2,715</b>	<b>2,751</b>	<b>2,787</b>	<b>2,826</b>	<b>3,021</b>	<b>431</b>

## AVERAGE WEEKDAY VEHICLE TRIPS

Average Weekday Vehicle Trips are used as a measure of demand by land use. Vehicle trips are estimated using average weekday vehicle trip ends from the reference book, *Trip Generation, 10<sup>th</sup> Edition*, published by the Institute of Transportation Engineers (ITE) in 2017. A vehicle trip end represents a vehicle entering or exiting a development (as if a traffic counter were placed across a driveway).

### Trip Rate Adjustments

To calculate street development fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed further below, the development impact fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

### Commuter Trip Adjustment

Residential development has a larger trip adjustment factor of 63 percent to account for commuters leaving Fountain Hills for work. According to the 2009 National Household Travel Survey (see Table 30) weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trip ends). As shown in Figure A8, the U.S. Census Bureau's OnTheMap web application indicates that 84 percent of resident workers traveled outside of Fountain Hills for work in 2015. In combination, these factors ( $0.31 \times 0.50 \times 0.84 = 0.13$ ) support the additional 13 percent allocation of trips to residential development.

**Figure A8: Commuter Trip Adjustment**

Trip Adjustment Factor for Commuters <sup>1</sup>	
Employed Residents	9,155
Residents Working in Fountain Hills	1,495
Residents Working Outside Fountain Hills (Commuters)	7,660
<b>Percent Commuting out of Fountain Hills</b>	<b>84%</b>
<b>Additional Production Trips<sup>2</sup></b>	<b>13%</b>
<b>Residential Trip Adjustment Factor</b>	<b>63%</b>

1. U.S. Census Bureau, OnTheMap Application (version 6.5) and LEHD Origin-Destination Employment Statistics, 2015.

2. According to the National Household Travel Survey (2009)\*, published in December 2011 (see Table 30), home-based work trips are typically 30.99 percent of "production" trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, LED OnTheMap data from 2015 indicate that 84 percent of Fountain Hills' workers travel outside the town for work. In combination, these factors ( $0.3099 \times 0.50 \times 0.84 = 0.12964686$ ) account for 13 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (13 percent of production trips) for a total of 63 percent.

\*<http://nhts.ornl.gov/publications.shtml> ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

## Adjustment for Pass-By Trips

For commercial development, the trip adjustment factor is less than 50 percent because retail development attracts vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE data indicate 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends.

## Estimated Residential Vehicle Trip Rates

As an alternative to simply using the national average trip generation rate for residential development, the Institute of Transportation Engineers (ITE) publishes regression curve formulas that may be used to derive custom trip generation rates, using local demographic data. Key independent variables needed for the analysis (i.e. vehicles available, housing units, households, and persons) are available from American Community Survey data. Shown in Figure A9, custom trip generation rates for Fountain Hills vary slightly from the national averages. For example, single-family residential development is expected to generate 7.29 average weekday vehicle trip ends per dwelling – compared to the national average of 9.44 (ITE 210). Multi-family residential development is expected to generate 3.63 average weekday vehicle trip ends per dwelling, which is lower than the national average of 5.44 (ITE 221).

**Figure A9: Average Weekday Vehicle Trip Ends by Housing Type**

		Households by Structure Type <sup>2</sup>			Vehicles per HH by Tenure
Tenure of Unit	Vehicles Available <sup>1</sup>	Single-Family	Multi-Family	Total	
Owner-occupied	17,046	8,252	968	9,220	1.85
Renter-occupied	3,664	1,087	1,370	2,457	1.49
Total	20,710	9,339	2,338	11,677	1.77

Type of Unit	Persons in Households <sup>3</sup>	Trip Ends <sup>4</sup>	Vehicles by Type of Unit	Trip Ends <sup>5</sup>	Average Trip Ends	Housing Units <sup>6</sup>	Trip Ends per Unit	
							Fountain Hills	U.S. Avg <sup>7</sup>
Single-Family	20,097	55,971	16,877	110,006	82,989	11,381	7.29	9.44
Multi-Family	3,881	8,806	3,833	15,394	12,100	3,334	3.63	5.44
Total	23,978	64,778	20,710	125,400	95,089	14,715	6.46	

1. Vehicles available by tenure from Table B25046, American Community Survey, 2013-2017 5-Year Estimates.

2. Households by tenure and units in structure from Table B25032, American Community Survey, 2013-2017 5-Year Estimates.

3. Total population in households from Table B25033, American Community Survey, 2013-2017 5-Year Estimates.

4. Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is  $EXP(0.89 \cdot \ln(\text{persons}) + 1.72)$ . To approximate the average population of the ITE studies, persons were divided by 36 and the equation result multiplied by 36. For multi-family housing (ITE 221), the fitted curve equation is  $(2.29 \cdot \text{persons}) - 81.02$ .

5. Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2017). For single-family housing (ITE 210), the fitted curve equation is  $EXP(0.99 \cdot \ln(\text{vehicles}) + 1.93)$ . To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 66 and the equation result multiplied by 66. For multi-family housing (ITE 221), the fitted curve equation is  $(3.94 \cdot \text{vehicles}) + 293.58$ .

6. Housing units American Community Survey, 2013-2017 5-Year Estimates.

7. Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

## Functional Population

TischlerBise recommends functional population to allocate the cost of certain facilities to residential and nonresidential development. As shown in Figure A10, functional population accounts for people living and working in a jurisdiction. OnTheMap is a web-based mapping and reporting application that shows where workers are employed and where they live. It describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations. OnTheMap was developed through a unique partnership between the U.S. Census Bureau and its Local Employment Dynamics (LED) partner states.

Residents that do not work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents that work in Fountain Hills are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Fountain Hills are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Fountain Hills, the proportionate share is 81 percent for residential development and 19 percent for nonresidential development.

**Figure A10: Functional Population**

	Demand Units in 2015	Demand Hours/Day	Person Hours	Proportionate Share
<b>Residential</b>				
Peak Population	28,282			
Residents Not Working	19,127	20	382,540	
Employed Residents	9,155			
Employed in Service Area	1,495	14	20,930	
Employed outside Service Area	7,660	14	107,240	
Residential Subtotal			510,710	81%
<b>Nonresidential</b>				
Non-working Residents	19,127	4	76,508	
Jobs in Service Area	4,424			
Residents Employed in Service Area	1,495	10	14,950	
Non-Resident Workers (inflow Commuters)	2,929	10	29,290	
Nonresidential Subtotal			120,748	19%
TOTAL			631,458	100%

Source: Maricopa Association of Governments 2015 Population Estimate, Fountain Hills; U.S. Census Bureau, OnTheMap 6.5 Application, 2015.

## Development Projections

Provided below is a summary of cumulative development projections used in the development impact fee study. Base year estimates for 2018 are used in the development impact fee calculations. Development projections are used to illustrate a possible future pace of demand for service units and cash flows resulting from revenues and expenditures associated with those demands.

**Figure A11: Development Projections Summary**

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
<b>Population</b>												
Peak	28,840	29,048	29,258	29,470	29,683	29,898	30,115	30,334	30,555	30,778	31,003	2,163
<b>Housing Units</b>												
Single Family	8,445	8,509	8,574	8,640	8,706	8,773	8,840	8,908	8,977	9,046	9,115	670
Multi-Family	4,823	4,860	4,897	4,935	4,973	5,011	5,050	5,089	5,128	5,168	5,208	385
<b>Total Housing Units</b>	<b>13,268</b>	<b>13,369</b>	<b>13,472</b>	<b>13,575</b>	<b>13,679</b>	<b>13,784</b>	<b>13,890</b>	<b>13,997</b>	<b>14,105</b>	<b>14,213</b>	<b>14,323</b>	<b>1,055</b>
<b>Employment</b>												
Industrial	455	458	462	464	466	468	470	471	473	475	477	22
Commercial	2,838	2,871	2,938	2,981	3,025	3,069	3,114	3,159	3,205	3,252	3,300	462
Institutional	469	478	502	512	523	534	545	557	568	580	592	123
Office	1,759	1,793	1,887	1,904	1,920	1,937	1,954	1,972	1,989	2,006	2,024	265
<b>Total Employment</b>	<b>5,521</b>	<b>5,600</b>	<b>5,789</b>	<b>5,861</b>	<b>5,934</b>	<b>6,008</b>	<b>6,083</b>	<b>6,159</b>	<b>6,236</b>	<b>6,314</b>	<b>6,393</b>	<b>872</b>
<b>Nonresidential Floor Area (KSF)</b>												
Industrial	280	282	284	285	286	288	289	290	291	292	293	13
Commercial	1,212	1,226	1,255	1,273	1,291	1,310	1,330	1,349	1,369	1,389	1,409	197
Institutional	505	514	540	551	563	575	587	599	611	624	637	132
Office	593	604	636	642	647	653	659	664	670	676	682	89
<b>Total Floor Area</b>	<b>2,590</b>	<b>2,626</b>	<b>2,715</b>	<b>2,751</b>	<b>2,787</b>	<b>2,826</b>	<b>2,865</b>	<b>2,902</b>	<b>2,941</b>	<b>2,981</b>	<b>3,021</b>	<b>431</b>

## APPENDIX B: LAND USE DEFINITIONS

### Residential Development

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. Fountain Hills will collect development fees from all new residential units. One-time development fees are determined by site capacity (i.e. number of residential units).

#### Single-Family:

1. Single-family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides.
2. Single-family attached (townhouse) is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.
3. Mobile home includes both occupied and vacant mobile homes, to which no permanent rooms have been added, are counted in this category. Mobile homes used only for business purposes or for extra sleeping space and mobile homes for sale on a dealer's lot, at the factory, or in storage are not counted in the housing inventory.

#### Multi-Family:

1. 2+ units (duplexes and apartments) are units in structures containing two or more housing units, further categorized as units in structures with "2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments."
2. Boat, RV, Van, Etc. includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence.

## Nonresidential Development

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The proposed general nonresidential development categories (defined below) can be used for all new construction within Fountain Hills. Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (i.e., jobs per thousand square feet of floor area).

**Commercial / Retail:** Establishments primarily selling merchandise, eating/drinking places, and entertainment uses. By way of example, *Commercial / Retail* includes shopping centers, supermarkets, pharmacies, restaurants, bars, nightclubs, automobile dealerships, and movie theaters, hotels, and motels.

**Industrial:** Establishments primarily engaged in the production, transportation, or storage of goods. By way of example, *Industrial* includes manufacturing plants, distribution warehouses, trucking companies, utility substations, power generation facilities, and telecommunications buildings.

**Institutional:** Establishments including public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, *Institutional* includes schools, universities, churches, daycare facilities, government buildings, and prisons.

**Office and Other Services:** Establishments providing management, administrative, professional, or business services; personal and health care services. By way of example, *Office and Other Services* includes banks, business offices, assisted living facilities, nursing homes, hospitals, medical offices, and veterinarian clinics.

## APPENDIX C: FORECAST OF REVENUES

The “Required Offset” percentage reduction is a placeholder that will be discussed in more detail at a later date. Arizona’s Enabling Legislation requires municipalities to forecast the revenue contribution to be made in the future towards capital costs and shall include these contributions in determining the extent of burden imposed by development. TischlerBise sometimes recommends a small percentage reduction in development fees to satisfy the “required offset,” which is a phrase taken directly from the enabling legislation (quoted below).

*9-463.05.E.7. “A forecast of revenues generated by new service units other than development fees, which shall include estimated state-shared revenue, highway users revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved land use assumptions, and a plan to include these contributions in determining the extent of the burden imposed by the development as required in subsection B, paragraph 12 of this section.”*

*9-463.05.B.12. “The municipality shall forecast the contribution to be made in the future in cash or by taxes, fees, assessments or other sources of revenue derived from the property owner towards the capital costs of the necessary public service covered by the development fee and shall include these contributions in determining the extent of the burden imposed by the development. Beginning August 1, 2014, for purposes of calculating the required offset to development fees pursuant to this subsection, if a municipality imposes a construction contracting or similar excise tax rate in excess of the percentage amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications, the entire excess portion of the construction contracting or similar excise tax shall be treated as a contribution to the capital costs of necessary public services provided to development for which development fees are assessed, unless the excess portion was already taken into account for such purpose pursuant to this subsection.”*

Fountain Hills does not have a higher than normal construction excise tax rate, so the required offset described above is not applicable. The required forecast of non-development fee revenue that might be used for growth-related capital costs is shown in Figure C1. The forecast of revenues was provided by the Town of Fountain Hills. Projected population plus jobs, for the entire Municipal Planning Area, are documented in the land use assumptions.

**Figure C1: Five-Year Revenue Projections**

Source	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
Intergovernmental	\$ 5,485,747	\$ 5,510,550	\$ 5,535,610	\$ 5,560,903	\$ 5,586,457
Permits, Licenses, Fees	\$ 1,161,061	\$ 1,080,158	\$ 1,122,024	\$ 1,116,202	\$ 1,153,139
Building Revenue	\$ 556,662	\$ 588,802	\$ 554,104	\$ 576,366	\$ 793,042
Local Taxes	\$ 9,067,725	\$ 9,103,363	\$ 9,442,027	\$ 9,758,534	\$ 10,097,493
<b>Total General Fund</b>	<b>\$ 16,271,195</b>	<b>\$ 16,282,873</b>	<b>\$ 16,653,765</b>	<b>\$ 17,012,005</b>	<b>\$ 17,630,131</b>

Source: Town of Fountain Hills 2018-2023 Revenue Projections.